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ABSTRACT

The book presents three 93-day lesson plans to motivate and teach handicapped secondary students basic academic skills in reading and language arts, English, and mathematics in conjunction with learning about automobile engines from Revell's Visible V8 Engine Kit. Each lesson plan is correlated with the Visible V8 Engine Kit and includes daily objectives and task analyses. The reading and language arts section includes selected vocabulary words grouped under common phonic rules. The English and mathematics sections each include student exercises, with answers for the teacher. Materials provided for teacher duplication include instructions for Visible V8 Engine Kit assembly, a vocational vocabulary pretest, a sample dealer billing sheet, and a time/dollar conversion sheet to figure out labor charges. (DLS)

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ACADEMIC INSTRUCTION WITH THE VISIBLE V8 ENGINE

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THE COORDINATED CORRELATED INSTRUCTIONAL PROGRAM

TRI-COUNTY EDUCATION CO-OPERATIVE

1978

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ABSTRACT

This product is a partial response to a need for motivating handicapped students on the secondary level, grades 6 thru 12, or whose chronological age would place them in this category. These are students who are as yet unable or refuse to recognize the necessity to become able to read, write, and compute at levels demanded by our society.

The subject matter consists of lesson plans, student exercise and teacher exercise manuals, a teachers guide, self-evaluation of the product. The lesson plans are in three subject areas all of which are designed to correlate with the Visible V8 Engine Kit produced by Revell, Inc. The subject areas are: English, reading and language arts, and mathematics.

Although this product is intended for those students meeting the criteria for placement in special education, it is our belief that other students who are in need of success and improvement of their learning skills would benefit from this highly motivational material.

Teachers who have participated in the use of this product have found a most acceptable way to bring "hands on" learning into the classroom that requires meaningful uses of the tactile and kinesthetic senses alongwith visual and auditory senses. Learning processes that include grouping, synthesis, analysis and evaluation as well as memory are also employed in the assembly of the kit. The product originated as one of several projects in the Coordinated Correlated Instruction Program from the Tri-County Education Co-Op in Stamford, Texas.

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TEACHERS GUIDE

READING AND LANGUAGE ARTS CORRELATED WITH THE VISIBLE V8 ENGINE

The academic material in this section is for handicapped students who are in grades 6 through 12. The teacher selects those especially interested in engines and cars. Students learn as few as five words in one week, with increased amounts to twenty words according to student ability.

Materials required for this instruction include the following: The Visible V8 Engine Kit by Revell; two "C" cell batteries, a knife or razor blade, rounded and pointed toothpicks, and styrene plastic model cement. Other materials are teacher-made which include the word cards and cards with numerals upon which individual parts are mounted for identification drills and tests.

"Instructions for the Visible V8 Engine" has been expanded into reading material which must be reproduced and placed within each kit before the students are given kits to assemble. A pretest and post test for reading consists of assembly parts words. This individualized test must be reproduced so that the student has one copy and the teacher a duplicate. Teacher enters the student's name on the teacher copy. The student is told to read the words aloud and gives the student ten seconds to pronounce a word. Teacher underlines each word the student mispronounces or does not attempt. Teacher must not give clues or word attack instructions prior or during the pretest. Those words missed by the student are to be located among the word cards. Teacher then enters the student's name in pencil on the back of each word card. At appropriate times the student is especially drilled with these specific word cards. If the student is unable to correctly read ninety-five per cent of the words on the pre test, teacher must reevaluate the probability of student success in being able to master reading five words each week. There is an allowance of twelve days before the student is to begin assembling the kit. During that time, the teacher has an opportunity to determine the students motivation and ability to learn the words.

The Neurological Impress Method is to be used with such students in the reading of instructions. If the student comprehends auditorily, there should be success in assembling the kit; which gives the student much satisfaction. However, the teacher must be especially concerned that the student learns the academic correlative material.

Lesson plans of the Reading and Language Arts section are arranged according to the number of days with which to assemble the model. These lesson plans are also referred to in the lesson plans for English as well as for mathematics. Drill is stressed in the plans and the chalkboard should be used by the students regularly. Teachers are encouraged to bring in their own creative ideas as they apply to the engine, but also to observe the objectives of the lesson plans.

ENGLISH CORRELATED WITH THE VISIBLE V8 ENGINE

This correlation provides many opportunities to develop student skills in listening, word recognition, vocabulary development, applied reading skills, reading comprehension as well as pictorial interpretation.

The materials, providing the above opportunities, are highly motivating and realistic to the students. Chilton's Auto Repair Manual 1976 is often used for applied reading skills. This manual was purchased at a retail store. The Car and Truck Appraisals 1977, book may be obtained from a local bank, credit union, or ordered. Much material advertising automobiles may be obtained by visiting dealers or attending a car show. These materials are free and are quite useful in determining what is factual and what is figurative. The pictures are also very useful for pictorial observation and interpretation. Other material includes an adaptation of a car dealer's billing sheet. Language that the student decides is important and "real" is found on the billing sheet. Students may bring in mechanics parts manuals, if their father or another relation is a mechanic. Students are given opportunities to participate with a sentence construction device, write a script for a radio play pertaining to buying a car, and demonstrate their completed model to other classes.

I. The Development of Student Listening Skills

Refer to the Reading and Language Arts lesson plans for reading, listening skills assignments. The Instructional Booklet is read in conjunction with observations of the Assembly Manual and prior to an activity of a step of assembly. Note: The Instructional Booklet refers to the "Instructions for the Visible V8 Engine", which provides most of the reading, before each step of assembly. "Instructions for the Visible V8 Engine" is adapted from written material previously printed when this model was manufactured by a company which was sold to Revell, Incorporated. The Assembly Manual is a term assigned to the plans for assembling the model that is included in the kit under the title of "The Visible V8 Engine".

Students have many opportunities to demonstrate their listening comprehension when the listeners are asked to tell what the instructions say to do. Even when students are not asked, they must apply the instructions in assembling the model.

II. Reading Experiences

A. Developing Word Recognition Skills

Included in this material are many vocabulary words grouped under ten headings of common phonics rules. It is believed that readiness does not occur at or about the same age level for all students. Some secondary students may become ready for instructions in phonics; some students may recall these rules and employ other rules they had learned previously. The teacher is advised to use teacher observation and judgment in individualizing this instruction.

B. Vocabulary Development

This instruction is particularly enriching to students, since a vocational vocabulary is being mastered in ways most acceptable to students desiring to assemble mechanical models. Many vocational words afford an easy way to learn at least one definition for each vocational word, simply because the names of engine model parts are readily matched to the model parts to be assembled. The model part is manipulated and placed in its proper position of assembly so that kinesthetic and tactile as well as visual and auditory sensory input is used.

C. Developing Reading Comprehension

Reading comprehension is necessary in order to accomplish the student's goal of assembling the V8 engine model. Certain students may be reminded that mistakes will be made in their model when they do not follow the printed instructions.

Immediate recall is necessary during the reading, interpreting, and assembly periods. Sequencing is built into the instructions for assembly. Student evaluation occurs with little planning needed by the teacher, for students evaluate their model as to its neatness, accuracy of assembly, and the engine's ability to operate without breaking parts of the model.

D. Developing Applied Reading Skills

Word definition assignments in reading and language arts lesson plans provide opportunities for learning to use guide words, pronunciation, symbols, parts of speech abbreviations, and key words given by dictionaries.

Automobile repair manuals provide excellent opportunities for developing applied skills in seeking information. English lesson plans include assignments using Chilton's Auto Repair Manual 1976. More recent Chilton's manuals are for sale at retail stores. Some students become aware of the necessity of being able to find information in automobile repair manuals; they now have a reason satisfactory to them to develop reading skills.

E. Affective Reading Development

Some students especially interested in automobiles and their engines appear to be so very intent on reading the Instructional Booklet, since the reading is viewed as necessary part of model building, that there is a tendency of students to reach a rational state not being dominated by an emotional state of being. Some original short stories comprising a portion of English Literature combines automobiles with affective reading.

III. Writing Experiences

Sentence construction for some students provides a barrier to writing that may equal the barrier of spelling. Devices of word association combined with parts of speech for sentence building are valuable instructional tools when used in structured classrooms. Instructions for one such teacher made sentence building device are as follows:

1. Obtain thirteen small match boxes or other small boxes of cardboard or wood. Make a hole at the center and through the top and bottom of each box.
2. Select brads or round toothpicks for the pin to fit through the holes of each box.

3. Obtain 3X5 white index cards; cut into strips of 3" X 1½".
4. Make a slot in each strip ½" from one end, 1/8" wide and 1" long.
5. Label two boxes nouns; type or print two or three noun words in a column 3/8" from the end of the slot with 1 3/4" of the strip remaining uninterrupted by the slot.
6. After noun words have been placed in both sides of each strip for twenty strips, place the strips inside the match box after opening one end of the match box so that the pin fits in the slot of each strip and the end of each strip with the typed column next to the slot is exposed as a tab to be pulled one inch to find the typed words.
7. Noun words should include assembly parts words and other words involving automobiles in order to keep the lessons within the interest area of the students.
8. Make two boxes of pronouns, one box for subjective and the other box for objective pronouns.
9. Make three boxes of verbs according to present, past, and future tense.
10. Make one box for adjectives.
11. Make three boxes for adverbs; one box of "when", another of "where", and another of "how".
12. Make one box for prepositions.
13. Make one box for conjunctions.

Teacher assigns basic sentence patterns of noun-verb; noun-verb-noun; pronoun-verb-adverb; noun-linking verb-noun. Student places the boxes in the order of the parts of speech; pulls a strip from each box for a part of speech and determines if the selections make a correct sentence and is a sentence that has meaning for that student. As students become familiar to the word and part of speech association, teacher writes simple sentences and has students enter the part of speech under each word in the sentence.

Developing skills in punctuation is within the context of the subject area of the Visible V8 Engine. The format is one of progressive difficulty transferring from simple sentence drills to punctuation within paragraphs to punctuation within letter writing. Many of the sentences are taken from the information in the Instructional Booklet for drill reinforcement.

Writing assignments are devoted to establishing realistic and pertinent examples for the student to perform. These assignments are requirements to write letters to business houses ordering automobile parts, or to customers advertising services or requesting payment of car repair bills.

Some brochures contain written paragraphs that are devoted to one subject and are so composed according to the writer's desired responses from the recipient.

IV. Literature and the Visible V8 Engine

Students participating in the Visible V8 Engine project are exposed to scientific forms of literature that require skills necessary for those who may enter training in mechanics school, as a mechanic or automobile parts employee.

Students must also picture themselves as members of a sales and advertising force as well as members of a consumer group. They are prospective customers for an automobile dealer. Students must recognize various literature expounding the qualities of automobiles and the bargains their customers can have by trading with them. Skills distinguishing figurative and literal expressions are presented within the subject area of the Visible V8 Engine model. Opportunities are given to identify the presumed characteristics of recipients of letter on the part of the sender. Students have opportunities to estimate or describe the attributes of character of the sender of such letters, and his purposes for originating the compositions. Students can develop awareness of the injection of jingles, and other popular expressions in association with advertising automobiles or products for automobiles.

V. Visual Interpretation

Students interpret the motives of pictorial advertising of various automobiles with people, objects, or environment presented in advertising brochures obtained from dealers.

Students watch television commercials advertising various models of automobiles to determine film characteristics as being documentary, glamorous, animated, or other characteristics to be identified.

VI. Student Presentation and Demonstration of the Visible V8 Engine.

Teachers who have completed the instruction of classes in which Visible V8 Engine models were assembled will ordinarily have students experiencing pride in their model and a desire to demonstrate their model to others.

The successful completion of the model provides a fine opportunity for students to experience growth in the area of public speaking.

Prior to a presentation, students will have been thoroughly instructed through the use of the Instructional Booklet, the Assembly Manual and the booklet included in the kit entitled "How an Auto Engine Works". If several students have been involved in assembling the models, assignments may be made to different students as follows:

1. Student operates the model on display; then, in the student's own manner, tells how a gasoline engine operates.
2. Second student points with a pointer to various model parts visible to the audience and identifies the parts.
3. Third student describes the fuel system.
4. Fourth student describes the cooling system.
5. Fifth student describes the lubricating system.
6. Sixth student describes the electrical system.
7. Seventh student describes the ignition system.

It is advisable for the teacher to approach the student presentation in a casual and informal manner, relying upon the thorough knowledge of the subject by the students and avoiding speech outlines, notes, or other material to be read.

Teacher objectives should consist of the following:

1. To be able to have students communicate clearly to an audience 80 per cent of the time.
2. To be able to demonstrate speaker composure 80 per cent of the time.

Training in the area of communication is also conducted in Reading and Language Arts lessons when students are required to interpret and express in the student's own words the instruction for assembly of the model.

MATHEMATICS CORRELATED WITH THE VISIBLE V8 ENGINE

The importance of mathematics becomes evident when the student is required to use numerals in so many different ways. The numeral letter code combinations required in an auto parts store, in ordering parts by mail, in repair manuals, and in car appraisals is brought into focus as representing objects important to the student.

As in the lesson plans of the Reading and Language Arts section, the tasks presented are grouped for students of different abilities. The first group of problems are arranged for students experiencing more difficulty in mathematics; the succeeding problems become more difficult. The teacher's judgment must be used in making assignments for individual students.

Materials include _Visible V8 Engine Kit; Chilton's Auto Repair Manual 1976; Automotive Parts and Accessories J. C. Whitney and Company, Catalogue No. 364B; Buyer's Guide Reports 1978 Autos; and Car and Truck Appraisals American Auto Appraisal, 1977 Book_. Teacher and student made materials include cards bearing a stock number of a car part on one side of the card and the automobile part's name on the other side of the card, as well as numeral cards for drill.

Learning modalities include visual, auditory and kinesthetic with convergent and divergent tasks.

Minimum skills include: Counting, addition, subtraction, multiplication, division, decimals, fractions, measurement and proportions.

Other skills are used in computing with a calculator, as well as the learning skills of recall, grouping, synthesis, analysis, and evaluation used in assembling the engine model. Locating information about car parts, and learning how to buy a car from a car salesman are important to a student.

The ownership of a car often brings about the need for knowledge about borrowing money. Car payments are amortized, but the full amount of interest of the original amount of money borrowed is borrowed for the number of years of the loan. Example: If a borrower borrows $5,000.00 at 12 per cent interest for three years, the borrower may be paying back some of the $5,000.00 each month of the three years; but the borrower pays all of the interest due on $5,000.00 as though the borrower was not to pay the loan, until the principal was due at the end of three years. Students also need to learn the importance of the interest rate before they borrow money.

The "Teacher Math Exercise Manual" includes drill and test problems under a double letter arrangement that are not included in the "Student Math Exercise Manual." The single letter problems include the answers to the problems in the "Student Math Exercise" manual that are grouped under the same "part heading".

The length of time is so arranged that all three correlations "Reading and Language Arts," "English," and "Mathematics" have lesson plans of ninety-three school days duration.

INSTRUCTIONS FOR THE VISIBLE V8 ENGINE

HELPFUL MODELING HINTS

Have the following tools before assembling the kit: a single edge razor blade or sharp knife, round and pointed toothpicks, and in some instances tweezers, rubber bands, masking tape, and a pencil are helpful.

Parts of materials not supplied but necessary for assembling are: styrene plastic model cement, vegetable oil, two "C" size batteries, and vaseline.

Before assembling any of the model, read and understand the instructions for the step of assembly. Refer to the drawings to identify the parts with their names.

HIDDEN NUT INSTALLATION

The Visible V8 Engine is held together by 34 screws and nuts to enable you to disassemble, repair, adjust, and reassemble your model. Special pockets have been designed to position the nuts and prevent them from rotating. Most of the nuts will be inaccessible for holding during assembly; thus it is very important to properly cement the nuts in place as follows:

1. Lightly coat the pocket with cement with a brush or pointed toothpick. Keep cement out of the hole by using one end of the round toothpick.
2. Place the nut into the pocket and align the hole of the nut with the hole in the pocket. Put cement along the sides and to the top of the nut. Don't allow any cement into the hole of the plastic or nut.

3. Remove any cement from the holes by using the rounded toothpick end that was not used to spread the cement.
4. After the cement has dried, screw one of the long screws into the nut through the plastic hole to determine if the nut has been properly placed and cemented.

Select Part #1, the Main Frame, and cement fifteen nuts into the pockets.
Select Part #3, the Front Block Wall, and cement three nuts into the pockets.
Select Part #4, the Rear Block Wall, and cement five nuts into the pockets.
Select parts #10 and 11, the right and left cylinder walls and cement two nuts on each cylinder wall cap as shown.
Select Part #91, the starter gears case, and cement four nuts into the pockets.

STEP 1 MAIN FRAME

Select the main frame and the three camshaft supports. Check the nuts in the pockets of the main frame to see if they are securely cemented. Trim the excess plastic from each camshaft support and the main frame. Check the fit of each camshaft support into the slots of the main frame as shown by the plan. With a toothpick, put cement in each slot and insert the camshaft supports into the slots. Allow the cement to dry and check to see that the camshaft supports do not tilt.

STEP 2 CRANKSHAFT

Select crankshaft segments 55A, 56B, 57C, 58D, 59E, 60F, 61G, and 62H. Trim excess plastic from each part. Place each part on the plan according to the drawing of that part. Press the crankshaft segments together at the connection paying attention to the different sizes of slots of each

STEP 2 (Continued)

crankshaft segment. Disconnect the crankshaft segments.

Select eight connecting rods #65. Trim off excess plastic. Oil the large hole of each connecting rod with vegetable oil. Place two connecting rods on crankshaft segment 56B. Make certain that the connecting rods turn easily. Connect 56B crankshaft segment to 55A crankshaft segment. Place the remaining six connecting rods 65 on their respective crankshaft segments as shown in Step 2 and in the same manner as the first connect rods 65 were placed on crankshaft segment 56B.

STEP 3 CRANKSHAFT INSTALLATION

Select the main frame and hold it upside down so that the half-bearings face upward. Place the assembled crankshaft with the connecting rods so that the front of the crankshaft rests on the front main bearing half and the remaining sections of the crankshaft are placed on the other bearing halves according to the drawing. All of the connecting rods should be inside the frame.

Select six long screws, and the three middle half bearing caps #64 and gently screw the middle half bearing caps 64 to the main frame. Select four long screws and the two end bearing caps 63. Notice the arrow placed on each end bearing cap. Have each end bearing cap's arrow pointing to your right as you look at the drawing in Step 3. Screw the End Bearing Caps to the Main Frame.

STEP 3 (Continued)

Be careful to not tighten the screw very tight. Place a drop of vegetable oil in the center hole of each bearing to lubricate the crankshaft. Turn the crankshaft slowly and determine that all of the segments of the crankshaft are turning easily. The Connecting Rods should also be turning on the crankshaft without binding. If the Crankshaft does not turn easily, loosen the tightest screws 1/4 of a turn.

Select the Crankshaft Timing Gear. Find the Timing Mark and color the Timing Mark with ink or paint so it is easier to see. Cement the Crankshaft Timing Gear to the front of the Crankshaft. Take care that the Main Frame and Camshaft Support do not receive cement at this time.

STEP 4 PISTON DETAILS

Turn the assembly right side-up so that the Main Frame is resting on the Main Bearings. Separate each pair of Connecting Rods so that the front Rod of each pair is at the right hand side of the engine (according to the drawing the front Connecting Rod is away from you). The rear Connecting Rod should be placed to the left side of the Main Frame (nearest you, according to the drawing) .

Select eight Piston Halves 67 (Male locators) and eight Piston Halves 68 (Female locators) and cement each Piston Half 67 to a Piston Half 68 to make eight Pistons. Trim the edges of extra plastic and determine that the hole of each Piston is clear for the Wrist Pin to fit the Piston.

STEP 4 (Continued)

Try a Wrist Pin (66) in the hole of each Connecting Rod. Each Wrist Pin (66) should turn easily. Add some vegetable oil to the hole of each Connecting Rod (65).

After the cement of the Piston halves is dried, insert a Wrist Pin (66) into the larger hole of a Piston, through the hole of the front Connecting Rod and into the other hole of the Piston. Wedge the head of the Wrist Pin (66) into the hole of the Piston. Repeat this procedure for all of the front Connecting Rod pairs as shown in the drawing, then connect the remaining Pistons to the rear Connecting Rods (65). Check to see that the front Connecting Rods and Pistons are on the right side of the Main Frame, and the rear Connecting Rods and Pistons are on the left side of the Main Frame.

STEP 5

Check Cylinder Wall Cap 10 and Cylinder Wall Cap 11; have the nuts securely in place. Trim extra plastic from each Cylinder Wall Cap and Cylinder Block bottom. Select Cylinder Wall Cap 10 and Cylinder Block bottom 8. With a toothpick or brush, apply cement along the edges of each round hole where the cylinders are to fit. Also apply cement to the outer side of each rib and the outer edge of Cylinder Block bottom. Place Cylinder Wall Cap 10 on Cylinder Block bottom 8 as shown in the drawings. Determine that the ribs of Cylinder Block bottom are between the wall and cylinders of Cylinder Wall Cap 10. Notice the inset drawing of Step 5.

Assemble and cement left Cylinder Wall Cap 11 to left Cylinder Block bottom

STEP 5 (Continued)

7 in the same way as the right side; allow both sides to dry.

Apply cement sparingly to the outer right hand edge of the Main Frame and the inside edges of the front and rear Camshaft Supports. Place the right Cylinder Block on the right side of the frame so that the ridges of the Cylinder Block bottom fit beside the Camshaft Supports. The front and rear ridges of the Cylinder Block bottom should be located inside of the front and rear Camshaft Supports respectively. The Pistons must be placed inside the cylinders. Try a partial rotation of the Crankshaft to determine if the pistons move freely in the cylinders.

Assemble the left Cylinder Block to the left side of the Main frame in the same manner. Allow the assemblies to dry. Rotate the Crankshaft to determine if the pistons move freely in the Cylinders.

STEP 6

Select Front Frame 3 and check the three nuts to determine if they are cemented securely. Trim extra plastic from Front Frame 3. Slide Front Frame 3 into position between the Crankshaft Timing Gear and the Front Frame. Notice that diagonal ridges extend downward from the center of the Front Wall Block 3 and should seat squarely on the front of the Main Frame. Walls of the Cylinder Block bottoms should seat into the diagonal grooves running upward from the center of the Front Wall Block 3. Fasten Front Wall Block 3 to the front of the Main Frame with 2 short screws. Before tightening screws, apply cement to the snap locks designated as "Points X" on the drawing. Secure the top of the Front Frame to the Cylinder Blocks by

STEP 6 (Continued)

pressing together to engage the snap locks. Tighten the two screws at the bottom of the front frame.

Check that five nuts are securely in place on the Rear Wall Block 4 and assemble to the Main Frame in the same manner as the Front Wall Block 3 was secured on the Main Frame. Notice Points "Y" are to have cement.

STEP 7 CAMSHAFT INSTALLATION

Select Right Cylinder Inboard Wall 12 and Left Cylinder Inboard Wall 9 and slide each downward between the Front and Rear Wall Blocks. Note the rectangular guide notches are formed between the Front and Rear Wall Blocks and each Cylinder Block. The rabetted bottom edges of Cylinder Inboard Walls will fit into the risers of the Cylinder Block Bottoms.

Select the Camshaft 40, Front Camshaft Timing Gear 43, Rear Camshaft Bevel Gear, and the Camshaft Rear Retainer.

Notice the timing mark on the Front Camshaft Timing Gear. Color the mark with ink or paint. Notice the timing mark on the Rear Camshaft Bevel Gear and color that mark with ink or paint. Press the Front Camshaft Timing Gear 43 on to Camshaft 40 so that the timing mark and pin of the Front Camshaft Timing Gear 43 face outward. Next press the Rear Camshaft Timing Gear on to the Camshaft 40 so that the timing mark faces inward and the beveled gear's smaller outer diameter faces toward the rear. Observe the drawing of Step 7. Put Camshaft 40 through the hole of the Front Wall and through the smaller hole of the Rear Wall. Rotate Crankshaft Timing Gear 54

STEP 7 (Continued)

so that its Timing Mark is upward. Adjust Camshaft Timing Gear 43 so that its timing mark is at the bottom and the timing marks are in line as shown in Detail A of Step 7. Select Camshaft Rear Retainer 43 and press on to the rear end of Camshaft 40 which extends outside of Rear Wall 4.

STEP 8 BASE ASSEMBLY

Select Lower Base Brace 123 and Upper Base Brace 122 and cement together where the braces cross. Select Base Front 120 and Base Rear 121. Add cement to the perimeter of each round extension and press the Front and Rear Bases on the Brace Bases where shown in the drawing of Step 8.

STEP 9 FLYWHEEL/CONVERTER HOUSING

Select Converter Housing 116 and Flywheel 117. Trim all excess plastic from these parts. Notice the drawing in which the collar of Flywheel 117 is outside of Converter Housing 116. Apply cement sparingly to the three pins and along the outer rim of Converter Housing 116. Press Flywheel 117 on Converter Housing 116. Wipe off any excess cement. Allow to dry.

STEP 10 TRANSMISSION/BELL HOUSING

Select Upper Half Transmission 23 and Lower Half Transmission 24. Trim excess plastic from the parts and fit the two parts together as shown on the plan and observe their alignment. Take them apart and sparingly add cement to Lower Half Transmission 24. Press Upper Half Transmission 23 on the Lower Half Transmission. Wipe away excess cement and allow to dry.

Select Bell Housing 13 and fit to the Transmission so that the ridges

STEP 10 (Continued)

of the Transmission fit properly into the slots of Bell Housing 13. Remove Bell Housing 13 from the Transmission and add cement sparingly to the collar and ridges of the Transmission. Press Bell Housing 13 on to the Transmission. Find Transmission Retainer 22; apply cement sparingly inside the Transmission Retainer and press it on the collar of the Transmission and against the Bell Housing.

STEP 11 OIL PUMP ASSEMBLY

Select Oil Pump Screen 36 and Screen Housing 79. Sparingly add cement to the outer edge of Oil Pump Screen 36 and press the Screen on to the Screen Housing.

Select Upper Half Oil Pump and Lower Half Oil Pump. Place the pipe of Screen Housing on the trough of Lower Half Oil Pumper, add cement along the edge of the collar of Lower Half Oil Pump 78. Press Upper Half Oil Pump 77 on to Lower Half Oil Pump. Set aside to dry.

STEP 12 BATTERY

Find insulated wire, cut two 6" and two 15" lengths of wire and strip 1/2" insulation off the ends of each wire; you can make a small nick in the insulation and strip the end of the wire between your thumbnail and finger. Find the Brass Battery contact and bend slightly in the middle. Connect one 6" length wire to the Brass Battery Contact by inserting a bared end through a hole and twisting the wire on itself. Repeat this process using one end of 15" wire and placing it into the other hole of the Brass Battery Contact. Slide the Brass Battery Contact into the grooves of the Battery

STEP 12 (Continued)

as shown in the drawing. Bend each wire into the slots as shown.

Find two Battery Switch Buttons 99 and two brass Eyelets. Insert Eyelets about halfway into Switch Buttons (99). The two remaining wires of 6" and 15" lengths are each connected to one of the Switch Buttons (99), trapping the wire between the plastic Button and the flange of the Eyelet, as the Eyelet is pressed completely into Switch Button 99 as shown in Detail A.

Find the Battery Contact and place it into the end of Battery Box (96) as shown. Find Switch Plate (98) and place the Button Switch 99 with the 6" wire attached through the upper hole marked Motor. Place the other Button Switch 99 through the lower hole marked Coil. Slide Switch Plate (98) into the Battery Box being sure the Coil Button is on the bottom.

STEP 13 STARTER

Remove excess plastic from Pinion Gear (47A). Press Pinion Gear (47A) slowly onto the shaft of the Electric Motor as shown in Drawing and Detail A.

Select Starter Motor Housing (93) and thread the red and blue insulated wires of the motor into the holes as shown in Drawing B. Slide the Motor into Starter Motor Housing (93) so that the "D" shaped shaft on the end of the Motor matches with the "D" hole in Starter Motor Housing (93). The Motor must fit tightly in the Housing.

Find Starter Gears Case (91) and place Pinion Gear (47A) through the larger

STEP 13 (Continued)

hole of the Starter Gears Case (91) and then slide Pinion Gear (47A) into the connected smaller hole of Starter Gears Case (91). Use two 1/4" screws and fasten Starter Motor Housing (93) to Starter Gears Case (91).

Select and trim Gear A (45), Gear B (46), and Gear C (47) and install them by alphabetical order with the letter side up. Find Starter Gear Case Cover (92) and check the fit of both ends of the shaft of each gear. Using two 1/2" screws, connect Starter Gear Case Cover (92) to Starter Gears Case (91).

Find Pinion Gear (44) and gently press onto the shaft protruding from the Starter Housing.

Connect the starter and battery wires to test the motor and gears, disconnect and set aside.

STEP 14 OIL PUMP/PAN INSTALLATION

Select the Engine Block and turn it upside-down. Find the Oil Pump and attach to the Engine Block with one short screw as shown in the drawing. Find Oil Pan (14) and Oil Pan Drain Plug (76). Cement Oil Pan Drain Plug into Oil Pan (14) on to the Engine Block according to the drawing.

Find Oil Dip Stick Support (85), apply a small amount of cement and slide it into the slot of the Engine Block where shown in the drawing.

STEP 15 TRANSMISSION/STARTER INSTALLATION

Without cement, press the Flywheel Converter Housing Assembly onto the Crankshaft.

Select the Starter Assembly and unscrew the two 1/2" screws from the starter. Do not allow the Starter Gear Case Cover to come off of the Starter. Attach the starter to the Engine Block where shown in the drawing by screwing the 1/2" screws through the holes of the Engine Block and into the nuts on the Starter Motor Case Assembly. Notice the top screw is in a slot of the Engine Block so the Pinion Gear can be adjusted to the Flywheel Gear. Apply a small amount of Vaseline to the Pinion Gear teeth of the Starter Motor.

Carefully align the Bell Housing/Transmission Assembly to the Engine Block. Take care to mesh the Flywheel Gear Teeth with the Motor Pinion Gear Teeth. Fasten the Bell Housing Assembly to the Engine Block by using three 1/2" screws at the top portion of the Bell Housing and two 1/4" screws at the bottom.

Note that provision has been made for manual operation by loosening the top screw slightly to disengage the gears by pivoting the Motor along the slot. This will be helpful in checking out the operation of various parts.

STEP 16 TEMPORARY HOOKUP

Select the Engine Block Assembly and place it on the Stand as shown in the Drawing. Install the Batteries inside the Battery Box. Connect the Motor Leads to the short wires of the Battery. Press the Motor Button to

STEP 16 (Continued)

operate the Engine, observe the rotation of the Timing Gears. The Crankshaft Gear should rotate clockwise and the Camshaft Gear should rotate counter-clockwise. If the Engine is rotating in the opposite direction, reverse the connection of the Motor Leads to the short Battery Wires. After the Engine has operated properly, disconnect the Battery Wires from the Motor Leads. You can reconnect the power whenever you desire to check operation of added parts.

STEP 17 EXHAUST/INTAKE MANIFOLDS

Complete the following series of sub-assemblies so that the cement will be dry when the parts are needed for the final assembly.

Select Left Inboard Half Exhaust Manifold (27L) and place cement sparingly along the edges around the pins. Select one Outboard Half Exhaust Manifold (26) and cement to Left Inboard Half Exhaust Manifold (27L). Repeat this process with Right Inboard Half Exhaust Manifold (27R) and the other Outboard Half Exhaust Manifold (26).

Select Intake Manifold Lower Half (29) and sparingly apply cement along the edges that will join with Intake Manifold Upper Half (28). Select Intake Manifold Upper Half (28) and press on Intake Manifold Lower Half (29).

STEP 18 CARBURETOR/OIL FILTER/AIR CLEANER

Find Front Half Carburetor (52) and Rear Half Carburetor (53). Trim excess plastic from these parts. Use cement sparingly on the edges of Front Half Carburetor (52) and join to Rear Half Carburetor (53).

STEP 18 (Continued)

Select the halves of the Oil Filter (89) and (90). Use cement sparingly and press Oil Filter Half (90) on Oil Filter Half (89).

Select Air Cleaner Housing Upper Half (113) and Air Cleaner Housing Lower Half (114). Trim away excess plastic and add cement at several spots on the inside wall of Air Cleaner Housing Upper Half (113). Assemble Air Cleaner Housing Upper Half (113) and Air Cleaner Housing Lower Half.

STEP 19 FAN/WATER PUMP

Insert Fan Hub (103) into the "D" shaped hole of Front Fan Half (102) so the "D" shaped shaft of Fan Hub (103) protrudes from the surface of Front Fan Half (102). Apply cement to Rear Fan Half (101) and assemble to complete the Fan Assembly.

Find Front Pulley Half (105) and Rear Pulley Half (104) and cement together taking care not to have cement in the groove of the Pulley Assembly.

Select Water Pump Housing Front Half (30), Water Pump Impeller (100), and Water Pump Housing Rear Half (31). Add vegetable oil to the shaft of Water Pump Impeller (100) and insert it into the bearing sleeve of Water Pump Housing Front Half (30). Next, cement the Pulley Assembly on the shaft of Water Pump Impeller (100), follow with the cementing of the Fan Assembly to the shaft of Water Pump Impellor (100). Use cement sparingly on the edges of Water Pump Housing Rear Half (31) and press on to Water Pump Housing Front Half (30). Set aside for later assembling.

STEP 20 GENERATOR

Apply cement sparingly to the inside ring edge of Generator Fan/Pulley Half (49). Find Generator Pulley Half (50) and press on Generator Fan/Pulley Half (49) so that they are cemented together. Find Generator Shaft (51) and add vegetable oil to the larger circumference of the shaft. Insert Generator Shaft (51) into the sleeve bearing of Generator Case Front Plate (112).

Take the Generator Pulley Fan Assembly and carefully apply a small drop of cement into the hole of the Generator Pulley Fan. Press Generator Pulley Fan on the protruding end of Generator Shaft (51).

Select Generator Case (111) and Generator Bracket (33). Add cement sparingly to the edge of Generator Case (111) and press Generator Case Front Plate (112) to the cemented edge of Generator Case (111), trapping Generator Bracket in between. Select Adjustable Generator Support (34); using small screw with nut, attach Adjustable Generator Support (34) to Generator Case Front Plate (112) as shown in the drawing.

STEP 21 FUEL PUMP/VIBRATION DAMPER

Find Fuel Pump Front Half (86), Fuel Pump Actuator Arm (87), and Fuel Pump Rear Half (88). Trim away excess plastic. Without cement, fit the parts together with the Fuel Pump Actuator Arm trapped between the two halves of the Fuel Pump. Determine the ability of Fuel Pump Actuator Arm (87) to move a short distance up and down. Separate the parts and apply cement sparingly to Fuel Pump Rear Half (88), taking special care to keep cement from the area for the Fuel Pump Actuator Arm. Assemble the parts

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STEP 21 (Continued)

together as shown in the drawing and allow to dry.

Select Vibration Damper Pulley Rear Half (106) and Front Pulley Half (107). Apply cement to the inside circle of Vibration Damper Pulley Rear Half (106) and press Front Pulley Half (107) onto Vibration Damper Pulley Rear Half (106) so that a V groove is formed which will retain the Fan Belt. Select Timing Gears Cover (5) and insert Vibration Damper Pulley shaft through the hole of Timing Gears Cover (5). Find Vibration Camper Retainer (108) and cement to the Vibration Damper Pulley Assembly, taking care not to get any cement on Timing Gears Cover (5).

STEP 22 CYLINDER HEADS

Select Right Cylinder Head (16) and Left Cylinder Head (17) and the two Cylinder Head Caps (18). Trim each part of excess plastic. Apply cement in spots to the outer edges of each Cylinder Head Cap 18 and cement one to Right Cylinder Head (16) and the other to Left Cylinder Head (17) as shown in Drawing A.

Find eight Bearing Caps (118) and cement to both Cylinder Heads as shown in Drawing A, allow to dry.

Find sixteen Rocker Arms (69); notice one end is circular and the other is squared. Find two Rocker Arm Shafts (70). Trim off excess plastic and slide one Rocker Arm Shaft (70) through one Rocker Arm (69), next insert Rocker Arm Shaft (70) through a Bearing on the top of one of the Cylinder Heads. Make certain that the circular end of each Rocker Arm (69) is

STEP 22 (Continued)

located above a hole for a Valve Stem, see drawing D. Add another Rocker Arm (69) to Rocker Arm Shaft (70). Select six of Rocker Arm Shaft Spacer (19), trim away excess plastic and place one on Rocker Arm Shaft (70). Insert Rocker Arm Shaft (70) through another Rocker Arm (69) and through the next Bearing of the Cylinder Head. Repeat this process, until eight of Rocker Arm (69) and three of Rocker Arm Shaft Spacer (19) are assembled on Rocker Arm Shaft (70) as shown in Drawing C. Find one Rocker Arm Shaft Cap (71) and cement to the end of Rocker Arm Shaft (70). Repeat this assembly procedure on the other Cylinder Head.

Select one of the Cylinder Head assemblies and apply cement along the edges of the large rectangular holes. Select one of the Exhaust Manifolds and press it to the cemented edges of the Cylinder Head as shown in Drawing D. Repeat this assembly with the other Cylinder Head and Exhaust Manifold.

Find Sixteen Valve Stems (72), sixteen Valve Springs, eight Intake Valves (73) and eight Exhaust Valves (74). Trim away excess plastic. Insert the Valve Stems (72) through the Valve Springs as shown in Drawing D and through the Cylinder Head. Use a hexagon shaped pencil and tape as shown in drawing E to depress the springs; show each Valve Stem (72) protrudes from the hole of the Cylinder Head, see Drawing F. Notice the Valve Seats are of two different sizes. The larger Valve Seats are for the Intake Valves, while the smaller Valve Seats are for the Exhaust Valves. Carefully trim the Valve Heads for excess plastic and place a small drop of cement inside the collar of each Intake Valve (73) and Exhaust Valve (74). Cement the large Valve Heads to the Valve Stems (72) in the large Valve Seats and the

STEP 22 (Continued)

small Valve Heads to the Valve Stems (72) in the small Valve Seats. Keep the pencil depressing the Valve Stems (72) until the cement has dried, then remove the tape and pencil. Repeat the assembly of Valves in the other Cylinder Head.

STEP 23 PUSH ROD INSTALLATION

Select 16 of the Push Rod (75); remove all extra plastic and add vegetable oil to the bottoms of each. Insert eight of Push Rod (75) into the holes of the Right Cylinder Head. Carefully align the Right Cylinder Head to the right side of the Engine Block. Determine that each Push Rod (75) is correctly placed on the Camshaft and in the Guide Ring.

Select two 1/2" screws and screw the Right Cylinder Head to the right side of the Engine Block. See the drawing.

Repeat this assembly with the Left Cylinder Head, remaining eight Push Rods (75) and the Engine Block.

Find the Battery and connect the 6" wires to the leads of the Starter Motor so that the Crankshaft Timing Gear is rotating clock-wise. Check the operation of the Valves and Push Rods then disconnect the Battery, if the Engine is operating properly.

STEP 24 FRONT COMPONENTS INSTALLATION

Position the Fuel Pump with the pin of the Camshaft Timing Gear in the slot of the Fuel Pump Actuator Arm. Assemble the Timing Gear Cover with

STEP 24 (Continued)

the Pulley Vibration Damper assembly to the Engine Block, trapping the Fuel Pump. Make certain the "D" shaped end of the Crankshaft enters the sleeve of the Pulley Shaft properly. The three locating studs of the Timing Gear Cover must be seated in the corresponding holes in the Front Frame. Select two 1/4" inch screws and screw the Fan/Water Pump Assembly to the Engine Block, trapping the Timing Gear Cover.

Find Fuel Bowl (21) and pour a few drops of yellow colored water in it about 1/3 full. Add cement sparingly to the edge of the Fuel Bowl (21) and cement to the Fuel Pump.

STEP 25

Select the brass metal Leaf Contact and the Rotor Shaft Distributor (83). Cement the Leaf Contact to Rotor Shaft Distributor (83) as shown in the upper left hand drawing.

Find one Eyelet and Distributor Rotor Top Half (82). Place the Eyelet into the hole inside Distributor Rotor Top Half (82). Add a spring to the eyelet. Carefully cement Distributor Rotor Top Half (82) to Distributor Rotor Shaft Bottom Half (83). Find Distributor Housing and Distributor Retainer 84. Add a small amount of cement to the Distributor Housing 81 and slide Distributor Retainer 84 on to the Distributor Housing 81 as shown in the upper right drawing. Next select Distributor Shaft Sleeve (6) and position it over the shaft of Distributor Housing (81), so that its tab fits against the flat surface of Distributor Housing (81).

STEP 26 DISTRIBUTOR/GENERATOR INSTALLATION

Select Distributor Gear (38) and mark its timing mark with ink or paint. Find Distributor Shaft (37) and cement its shorter "D" shaped end to Distributor Gear (38) notice the arrow pointing to the Gear as shown in Drawing A.

Assemble the Battery to the Starter once again and press the Motor Button to rotate the Camshaft Bevel Gear so its Timing Mark is upward to become in line with the Timing Mark of Distributor Gear (38). See the inset in Drawing A. Distributor Shaft (37) should be placed inside the collar of the Rear Engine Block Wall as shown in Drawing A. Find Distributor Housing (81) assembly and install over the "D" shaped Distributor Shaft (37). Find Block Cover 15 obtain two short screws with nuts and place one in each corner of the rear holes leaving space between the Block Cover (15) and the nut (see inset of the drawing). Slide Block Cover (15) on the Engine Block so that the nuts are positioned in the slots of the top rear of the Engine Block. The tab of Distributor Retainer 84 should fit in the slot of Block Cover (15). Using a 1/2" screw, mount the Generator as shown in the drawing. Without cement mount the stud on the free end of the Generator Tension Rod in the hole at the front of the Water Pump. Select the Fan Belt and mount it on the three pulleys. Adjust the Generator Tension Arm Bracket (Adjustable Generator Support 34) to provide a snug but not tight fit of the Fan Belt on the Pulleys. Find the Distributor Rotor Assembly and without cement fit inside the Distributor Housing and over the "D" shaped end of Distributor Shaft (37). Attach the Battery to the Starter as before and test the Engine, then disconnect the Battery.

STEP 27 SPARK PLUG DETAILS

Select eight Spark Plugs (119) (For added realism, paint the upper half white and allow to dry). Thread the leads of each bulb through the hole of each Spark Plug (119) see Drawing A and test each bulb with a maximum of three volts. Apply a drop of cement to the base of each Spark Plug (119) and gently seat the bulb to the Spark Plug (119) with the bulb area containing the filament being exposed.

Without cement, insert four Spark Plugs with bulbs into the holes of the Left Cylinder Head as shown in Drawing B. Thread one wire from each bulb through the Inboard Guides and the other wire from each bulb through the Outboard Guides. Gently pull the Outboard Wires taut. Cut the wires from the Outboard Guides to the same length as the shortest of the four wires. Carefully strip 1/2" of insulation from the end of each wire. Do not cut or strip the wires from the Inboard Guides.

Repeat the sequences with the Right Cylinder Head and remaining bulbs and four Spark Plugs (119). However, cut the four wires from the Outboard Guides to within 2" of the end of the Right Cylinder Block and strip the ends 1/2" inch. Do not cut or strip the Inboard Guide wires, see Drawing B.

Twist the Left Outboard Wires together and twist the Right Outboard Wires together. Select the 15" Coil Wire leading from the back of the Battery and insert it and the Outboard Plug Wires through the bottom end of Coil Bottom Half (110). Neatly twist all of these exposed wire ends together; see Drawing C.

STEP 28 DISTRIBUTOR HOOKUP

Select Distributor Cap (80) and note that the Spark Plug terminals are numbered in accordance with the timing diagram, see Drawing of the Distributor Cap (80). Place Distributor Cap (80) on the Distributor and twist clockwise to lock in place. Take the wire lead from the Spark Plug in the number one position that is threaded through the Inboard Guide and check to determine if it reaches the Number One Tower on the Distributor Cap in a gentle curve. If the wire is too long, cut it back to the desired length and strip 1/4" of insulation from the end. Select the remaining three Inboard Guide Wires and establish the desired length of each wire to its corresponding number and Tower on the Distributor Cap. (Ex. Number 3 Inboard Guide Wire to the Number 3 Tower on the Distributor Cap; Number 5 to Number 5 Tower and Number 7 to Number 7 Tower.) Remove Distributor Cap from the Distributor and place Rivets in these numbered 1, 3, 5, 7 holes with the exposed wire ends in the holes, being trapped by the Rivets. See Detail A. Press each Rivet until the end of the Rivet is flush with the inside surface of the Battery Cap (80).

Repeat the entire wiring assembly of the Spark Plugs on the right side of the engine, until all eight wires of the left and right sides are in place and correctly riveted in the Distributor Cap.

Thread the front 15" Wire from the Battery through Bottom Half Coil (110) and Top Half Coil (109). Wrap the Long Rivet with the stripped end of the Front 15" Wire. Press the Long Rivet into the Center Tower in the Distributor Cap.

STEP 28 (Continued)

Cement Coil Parts (109) and (110) together, hiding the Outboard Wire splice.

Test the operation by pressing both Switch Buttons. Each Spark Plug should "fire" when the Piston is at the top of its "compression" stroke.

STEP 29 FINAL ASSEMBLY

Cement Oil Filler Pipe (95) to the Block Cover collar and place Oil Filler Cap (94) on top of Oil Filler Pipe (95).

Drop the Oil Filter into Oil Filter Cover (25) and cement to the Engine where shown in Detail A.

Select Thermostat (48) and trim off excess plastic. Drop Thermostat (48) into the top of the Water Pump Assembly. Mount Thermostat Housing (32) to the Water Pump Assembly as shown in the drawing.

Mount the Intake Manifold, Carburetor, and Air Cleaner on the Engine as shown. Use Shaft/Wing Nut (115) to lock them in place. Rotate Shaft/Wing Nut (115) one-fourth of a turn to lock the parts in place.

READING PRETEST OF THE VISIBLE V8 ENGINE

nut, block, left, box, camshaft, segment, connecting, rod, end, inch, piston, wrist, pin, bottom, snap, lock, bevel, cross, stud, top, tab, bell, neck, pump, contact, brass, button, switch, shaft, plug, pan, slot, fan, bracket, belt, stem, rim, band, bulb, notch, plastic, cap, stick, half, length, cement, diameter, fuel, timing, electric, frame, hole, side, brace, base, pipe, wire, case, plate, blade, space, guide, stroke, intake, main, rear, gear, screen, hollow, teeth, drain, lead, pulley, seat, bowl, leaf, clean, sleeve, diameter, retainer, pattern, impeller, rocker, damper, thermostat, washer, rubber, inner, filler, cleaner, filter, Mark, Torus, arm, spark, friction, transmission, insulation, tension, vibration, compression, cement, center, engine, generator, spacer, cylinder, fly wheel, battery, eye, eyelet, assembly, polystyrene, right, flash light, screw, blue, groove, housing, outer, exhaust

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qty	Stock No.	Amt.	THE MOTOR COMPANY SOMEWHERE TEXAS			Time am pm	air/con ☐	Labor
							Oil ☐	
			bill to			del. y n	filter ☐	
			address			ordr.	air/cln ☐	
			customer			By	Tran/O ☐	
			address			Mi.	Diff/O ☐	
			Mod.	make	res. ph.	Lic.	X tires ☐	
			date	serial no.	bus ph.	Yr.	Flush cool. ☐	
			Opr.	Repair - Labor Instructions		wx. ☐	Wash ☐	

			Authorization for repairs							labor	
no.	sub. rprs.	Amt.								parts	
			Customer sign.							acces	
			Warranty statement				Acct	Chrg	Cost	g.o. gr.	
	total									subl. rep.	
	access.		Gals. Gas @			☐ cash				tax	
			Qts. Oil @			☐ chrg					
			Lbs. Grease @			☐ intr					
	total acc		Total			By				tot.	

TIME AND DOLLAR CONVERSION SHEET FOR GARAGE LABOR CHARGES

Time in Hours & Tenths	$5.00	$5.50	$6.00	$6.50	$7.00	$7.50	$8.00	$8.50	$9.00	$9.50	$10.00	$10.50	$11.00
0.1	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10
0.2	1.00	1.10	1.20	1.30	1.40	1.60	1.60	1.80	1.80	2.00	2.00	2.10	2.20
0.3	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	3.00	3.15	3.30
0.4	2.00	2.20	2.40	2.60	2.80	3.00	3.20	3.40	3.60	3.80	4.00	4.20	4.40
0.5	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50
0.6	3.00	3.30	3.60	3.90	4.20	4.50	4.80	5.10	5.40	5.70	6.00	6.30	6.60
0.7	3.50	3.85	4.20	4.55	4.90	5.25	5.60	5.95	6.30	6.65	7.00	7.35	7.70
0.8	4.00	4.40	4.80	5.20	5.60	6.00	6.40	6.80	7.20	7.60	8.00	8.40	8.80
0.9	4.50	4.95	5.40	5.85	6.30	6.75	7.20	7.65	8.10	8.55	9.00	9.45	9.90
1.0	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50	9.00	9.50	10.00	10.50	11.00
2.0	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00
3.0	15.00	16.50	18.00	19.50	21.00	22.50	24.00	25.50	27.00	28.50	30.00	31.50	33.00
4.0	20.00	22.00	24.00	26.00	28.00	30.00	32.00	34.00	36.00	38.00	40.00	42.00	44.00
5.0	25.00	27.50	30.00	32.50	35.00	37.50	40.00	42.50	45.00	47.50	50.00	52.50	55.00
6.0	30.00	33.00	36.00	39.00	42.00	45.00	48.00	51.00	54.00	57.00	60.00	63.00	66.00
7.0	35.00		42.00		49.00		56.00		63.00		70.00		77.00
8.0	40.00		48.00		56.00		64.00		72.00		80.00		88.00

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READING AND LANGUAGE ARTS CORRELATED WITH THE VISIBLE V8 ENGINE

The correlative academic material includes the total number of words desirable for learning by the students having the most ability to read, write, and spell words. The teacher must reduce the number of words for a given student to read, write, and spell, according to the teacher's judgment of the number of words a particular student can successfully learn in one week's time. Example: A student or students may learn only five words in one week's time. Engine parts words should take priority over procedure words.

Words are grouped according to the phonics rule or rules being introduced. Since the "Helpful Modeling Hints" and "Hidden Nut Installation" sections must be read and understood before assembling of parts takes place; the first three weeks should be used in word and phonics rule mastery of the six phonics rules until the thirteenth day at which time "Hidden Nut Installation" may be conducted. Those students with reduced spelling words should have phonics rules introduced at the rate of one rule per week. Refer to the enclosed sheets containing the directional headings and spelling words grouped under eleven common phonics rules.

For students unable to master phonics rules, use engine model parts and the diagrams of parts in the Assembly Manual for matching with word cards. Match parts to diagrams of parts, and words in the Assembly Manual, and word cards. These students will be placed on a restricted schedule. A pretest of sample words for students to read with accuracy can be helpful in determining to some extent a student's ability to read, refer to pretest reading section. Record the student's name on the back side of each word card that the student was unable to read.

1st DAY

"Helpful Modeling Hints" and "Hidden Nut Installation" of *Instructions For The Visible V8 Engine*.

Phonics Rule I. When a word or syllable ends with a consonant, the vowel is usually short, and the word or syllable is known as a closed syllable.

OBJECTIVES:

1. To be able to read, write, and spell ten introduced words with accuracy in drills 75 per cent of the time. The ten words are: hidden, nut, nuts, adjust, pockets, block, left, cap, brush, top.
2. To be able to apply the Phonics Rule I with accuracy in drills 75 per cent of the time.
3. To be able to have students on a restricted schedule to read, write, and spell the underlined words in Objective 1.

TASK ANALYSIS:

1. Teacher places alphabetical letters on the chalkboard and gives oral sounds of the letters. Give the short vowel sounds after each name of the vowel. Point out the vowel sounds made by "y" and the inaction "w" makes when "w" is a vowel. Example: cylinder "ĭ", eye "ī", assembly "ē", follow "o". "W" as a consonant often causes the lip movement as found in the "w" when pronouncing "with".
2. Teacher writes Phonics Rule I on the chalkboard, reads the rule and gives examples.
3. Show word cards of the ten introduced words, say each word; students repeat the word; and without seeing the word, write the word with a stiff arm and forefinger, saying each letter as it is written.

1st DAY (Continued)

4. Students are drilled with reading the word cards, until the students become able to read the words accurately.
5. Students go to the chalkboard; teacher pronounces a different word for each student to write and spell, until the students each have been drilled over the ten words a number of times. Example: Johnny, write "nut", Jim, write "adjust", Mary, write "pockets". If a student misspells a word, teacher writes the word correctly, and the student copies over the word, saying each letter as the letter is being copied.
6. Teacher pronounces each word for students to write simultaneously. Students are to leave each word on the chalkboard. Teacher requests the students to underline the closed syllable and give the short vowel sign over the vowel that is in the closed syllable. Example: tŏp
7. Teacher gives a trial pen and paper test of the ten words.
8. Students on a restricted schedule need not be required to memorize phonics rules. However, they should be participating in letter sounds and be exposed to the phonics rules.

2nd DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today with accuracy 75 per cent of the time. These words are: plastic, model, helpful, pocket, repair, designed, prevent, rotating, remove, cemented.
2. To be able to introduce Phonics Rule II, which states that an open syllable is one that ends in a vowel or is composed only of a vowel, and the vowel usually says its name. Students demonstrate comprehension of Phonics Rule II by identifying open syllables in words accurately 75 per cent of the time.

3. To be able to include yesterday's ten words in drills with accuracy of reading, writing, and spelling 80 per cent of the time. The words are: hidden, nut, nuts, adjust, pockets, block, left, cap, brush, top.

TASK ANALYSIS:

1. Teacher shows word cards one at a time of today's ten words, saying the word shown, students repeat the word. A student is asked to write the word in the air, using a stiff arm and finger, saying each letter's name aloud as it is written and without seeing the word card.
2. Teacher points out the difference in word structure of closed syllable words and open syllable words. Example: repair is pronounced re-pair not rep-air.
3. Teacher introduces Phonics Rule II as the open syllable rule.
4. Students participate in a chalkboard drill of writing and spelling today's ten words, underlining the closed and open syllables and placing a I or II below the syllable, denoting the applicable phonics rule.
5. Teacher includes yesterday's ten words in the chalkboard drill: hidden, nut, nuts, adjust, pockets, block, left, cap, brush, top.
6. Students are given a trial test, using pen and paper. Teacher pronounces each word twice, uses the word in a sentence, then pronounces the word a third time; before introducing another word.
7. Students on a restricted schedule may have the following words assigned: plastic, pocket, model as underlined in Objective 1.

3rd DAY

OBJECTIVES:

1. To be able to read, write, and spell the twenty words given previously with accuracy 80 per cent of the time in drills. The words are: cemented, hidden, remove, nut, rotating, nuts, prevent, pockets, designed, block, repair, left, pocket, cap, brush, helpful, top, model, plastic, adjust.
2. To be able to identify open and closed syllables in words accurately 75 per cent of the time.
3. To be able to find five of the words, selected by the teacher, in the dictionary; write two of their definitions, and originate one sentence for each definition written by the student with accuracy of 80 per cent in sentence writing.
4. To be able to select from the underlined words in Objective 1 for students on a restricted schedule.

TASK ANALYSIS:

1. Teacher reviews the class over the twenty words introduced previously by word recognition drill using word cards.
2. Teacher reviews students over closed and open syllables, by writing each rule on the chalkboard.
3. Teacher and class in unison read the rules, teacher asks for examples of applicable syllables.
4. Students perform in chalkboard drill, underlining syllables and putting a I or II beneath each syllable; indicating the rule that applies.
5. Teacher gives trial test and assigns test for tomorrow. Words missed on the trial test are correctly written five times by the students

3rd DAY (Continued)

missing the word or words.

6. Teacher uses objects from the kit and diagrams from the Assembly Manual with students on a restricted schedule. Students orally express the spelling words and point to the objects; then select the word cards for the parts, pointing to the word then to the object and to the object diagrammed.

4th DAY

OBJECTIVES:

1. To be able to perform on a written spelling test with 80 per cent accuracy. The twenty words are: nut, nuts, pocket, block, cap, pockets, plastic, model, helpful, repair, designed, prevent, rotating, remove, cemented, hidden, top, brush, left, adjust.
2. To be able to identify open and closed syllables by underlining each syllable and placing a I or II below each syllable, signifying the phonics rule applying with 70 per cent accuracy.

TASK ANALYSIS:

1. Teacher administers a spelling test of the twenty words by pronouncing each word twice, using the word in a sentence, then pronouncing the word once more, before expressing another word to spell.
2. Teacher requests that students underline the closed or open syllable and place a I or II below each underlined syllable. Refer to rules list.
3. Teacher selects from the group of underlined words in Objective 1 for students on a restricted schedule.

5th DAY

OBJECTIVES:

1. To be able to participate in reading, writing, and spelling the

5th DAY (Continued)

following ten words accurately 75 per cent of the time. The words are: select, materials, installation, place, hole, placed, frame, five, case, sides.

2. To be able to understand and apply Phonice Rule III, which stipulates that words with syllables having a vowel, consonant, "e" sequence usually have the vowel saying its name, the consonant making its sound, and the "e" silent. Students should perform with accuracy of application 75 per cent of the time.
3. To be able to have students on the restrictive schedule read, write, and spell the underlined words of Objective 1 with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Teacher submits word cards to today's ten words for word recognition drills.
2. Teacher points out Phonics Rule III and applies it to some of the words.
3. Students participate in chalkboard drills including the underlining of syllables and rule number I, II, III, where appropriate.
4. Students participate in a trial spelling and phonics rule application test, using pen and paper. Syllables to which phonics rule I, II, or III, apply are underlined with I, II, or III placed beneath the appropriate underlined syllable. Refer to rules list.
5. Teacher selects the main frame and battery case from the kit for students on the restricted schedule to examine with their hands and sight, matching the frame, a hole of the frame, and the battery case to the word cards "frame", "hole", and "case".

5th DAY (Continued)

6. Students match the words to the parts shown in Step 1 of the Assembly Manual.

6th DAY

OBJECTIVES:

1. To be able to read, write, and spell accurately the following ten words 75 per cent of the time: tape, knife, size, follow, follows, coat, dried, fifteen, three, main. Students on the restricted schedule are to learn the underlined words.
2. To be able to introduce Phonics Rule IV with correct application of the rule by students 75 per cent of the time. Phonics Rule IV states that two vowels go walking, the first vowel usually does the talking (is long).
3. To be able to apply at least two definitions for selected words by writing sentences employing different definitions of the selected words.

TASK ANALYSIS:

1. Teacher shows word cards for word recognition and air writing drill.
2. Teacher introduces Phonics Rule IV when a word is presented that includes a syllable to which Phonics Rule IV applies.
3. Teacher reviews students on Phonics Rule III, then Phonics Rules I and II.
4. Students go to the chalkboard for drill in writing and spelling the ten words introduced today.
5. Students perform recognition of Phonics Rules applying to syllables or words as they underline syllables and write the appropriate phonics rule number beneath the underlined syllable. Refer to rules list.

6th DAY (Continued)

6. Teacher includes yesterday's ten words in the chalkboard drill. The words are: select, installation, materials, place, hole, placed, frame, five, case, sides.
7. Students on the restricted schedule perform word recognition and chalkboard drills of: knife, main, tape, three, fifteen. They match objects and diagrams to words where possible. Stick a piece of tape on the fingers of the students for them to pull off, saying the word "tape", spelling "tape" orally, then writing the word on the chalkboard.

7th DAY

OBJECTIVES:

1. To be able to read, write, and spell accurately the twenty words introduced during the two previous days 80 per cent of the time. The words are: sides, case, five, main, three, fifteen, dried, tape, select, materials, installation, follow, frame, placed, hole, place, coat, follows, size, knife.
2. To be able to apply the phonics rule to a syllable where appropriate 75 per cent of the time.
3. To be able to have students on the restricted schedule to read, write and spell accurately 75 per cent of the time a selection of words from the words underlined in Objective 1.

TASK ANALYSIS:

1. Teacher asks students to recall the phonics rules previously given.
2. Teacher uses word cards for word and syllable recognition as well as phonics rule application.

7th DAY (Continued)

3. Teacher has students participate in chalkboard drill. Students write and underline syllables, placing the appropriate phonics rule number beneath each underlined syllable. Refer to rules list.
4. Students misspelling words are to write the word over the correctly spelled word at least five times, naming each letter as the letter is written.
5. Students take a trial test using pen and paper.
6. Students on the restricted word schedule are drilled for word recognition and chalkboard writing and spelling of five selected words. Students are given a trial test of the five words.
7. Students on restricted schedule may need to repeat activities matching objects to word cards.

8th DAY

OBJECTIVES:

1. To be able to perform during a test with accuracy in writing and spelling 75 per cent of the test. The words are: knife, size, follows, coat, place, hole, placed, frame, follow, installation, materials, select, tape, dried, fifteen, three, main, five, case, sides.
2. To be able to read portions of "Helpful Modeling Hints" with demonstrations of comprehension 75 per cent of the time.
3. To be able to have students on the restricted schedule write and spell with 80 per cent accuracy a selection of words from those underlined in Objective 1.

TASK ANALYSIS:

1. Students participate by using pen and paper, and writing spelling words

8th DAY (Continued)

as they are pronounced by the teacher, who also uses the spelling word in an example sentence.

2. Students read portions of "Helpful Modeling Hints" from the reading material for the kit and are asked to put directions into own words. For students needing help in reading, the student places a finger under each word as it is read, reads aloud, and teacher reads aloud into student's ear that is the dominant side. (Neurological Impress Method.)

9th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today with accuracy 75 per cent of the time. The words are: rear, shown, gears, tweezers, supplied, four, properly, rubber, batteries, starter. The underlined words are a selection for students on the restricted schedule.
2. To be able to understand and apply Phonics Rule V to appropriate syllables with accuracy 75 per cent of the time. Phonics Rule V states that "er", "ir", and "ur" usually say "er" as in "her", "bird", and "fur".
3. To be able to apply other Phonics Rules to syllables where the application is appropriate with accuracy 75 per cent of the time.
4. To be able to instruct students with the restricted schedules by object, picture, and word comparisons so students may manipulate the objects, then write and spell the words accurately 70 per cent of the time.

TASK ANALYSIS:

1. Teacher explains the new Phonics Rule V.

2. Teacher introduces the ten new words by showing the word cards for word and syllable recognition.
3. Students participate in chalkboard drills, writing each spelling word when pronounced by the teacher.
4. Students underline the syllables to which Phonics Rules I through V may apply. Students write the number of the rule beneath the underlined syllable, referring to the list of common phonics rules.
5. Students find five of the spelling words in the dictionary and write the definitions on paper of each word selected by the teacher.
6. Students on the restricted schedule perform word recognition and chalkboard drills of the assigned words.

10th DAY

OBJECTIVES:

1. To be able to read, write, and spell five introduced words and five abbreviations with accuracy 75 per cent of the time. The words and abbreviations are: position, parts, sharp, important, part, Qty., No., Gals., Qts., Lbs.
2. To be able to comprehend the meaning and structure of an abbreviation as demonstrated by accuracy in writing and spelling 75 per cent of the time.
3. To be able to comprehend Phonics Rule VI which stipulates that "ar" oftens says the name of the letter "r" as in art; "or" often makes the sound of "or" as in "fork".
4. To be able to have students on the restricted schedule master the abbreviations given in Objective 1 with accuracy 70 per cent of the time.

10th DAY (Continued)

TASK ANALYSIS:

1. Students are shown word cards of words and abbreviations. Students are told about the structure of abbreviations as well as the uses of the abbreviation.
2. Students read the word card and air write each word and abbreviation after it is shown.
3. Students go to the chalkboard to write and spell each word and abbreviation in a drill.
4. Teacher asks the students to write the abbreviation for a word. Example: Give the abbreviation for "gallons". Students should write Gals.
5. Students underline the syllables that include "ar" and "or" as they pertain to Phonics Rule VI.
6. Teacher includes the previous day's words: batteries, starter, rubber, properly, four, supplied, tweezers, gears, shown, rear.
7. Students underline the syllables to which Phonics Rule I through VI may apply. Students place the number of the rule below the appropriate underlined syllable. Refer to phonics rule list.
8. Each student is given a copy of the car dealer's billing sheet and drill the reading of the headings.
9. Teacher reads the "fine print" of the billing sheet and the "fine print" is discussed.
10. Students on the restricted schedule perform word recognition and chalkboard drills of abbreviations assigned. Students use the Dealer Billing sheets in drills by pointing to an abbreviation then giving the word for which the abbreviation applies.

11th DAY

OBJECTIVES:

1. To be able to read, write, and spell a total of twenty words and abbreviations accurately 80 per cent of the time. The words and abbreviations are: No., Qts., Gals., Lbs., Qty., part, important, parts, sharp, position, rear, shown, starter, batteries, rubber, four, supplied, tweezers, gears, properly.
2. To be able to apply the six introduced phonics rules to the syllable in words accurately 80 per cent of the time.
3. To be able to read instruction with comprehension 75 per cent of the time according to responses from questioning.
4. To be able to have those on the restricted schedule to read, write, and spell the abbreviations and words selected from the previous two days with 70 per cent accuracy. The words to be used are the ones underlined in Objective 1.

TASK ANALYSIS:

1. Teacher uses word cards of the words and abbreviations for word and abbreviation recognition.
2. Students review writing and spelling the twenty words and abbreviations at the chalkboard. Teacher emphasizes the period ending the abbreviation as a necessary part of the abbreviation.
3. Students underline the syllables and list the appropriate phonics rule number.
4. Students perform reading activities of "Helpful Modeling Hints" and "Hidden Nut Installation"; teacher asks students to interpret the meanings of the instructions. The Neurological Impress Method is

used when needed.

5. Teacher selects the following objects: a nut, several nuts, one toothpick, several toothpicks, a rubber band, pencil, cement, main frame, razor blade, tweezers, screws, and has students who have difficulty with word recognition to match word cards to objects.

12th DAY

OBJECTIVES:

1. To be able to write and spell accurately 80 per cent of the spelling words and abbreviations.
2. To be able to comprehend the instructions for "Hidden Nut Installation" and explain the instructions with 80 per cent accuracy.

TASK ANALYSIS:

1. Teacher gives pen and paper writing and spelling test of twenty words and abbreviations.
2. For the abbreviation spellings, teacher says, "Write the abbreviation of" then gives the word twice, before going to the next word to be abbreviated.
3. Teacher groups students and places the kits before the students. Students read the directions and compare them with the Hidden Nut Installation, referring to Steps 1, 5, 6, and 13 of the Assembly Manual to locate the parts needing nuts cemented to them.

13th DAY

OBJECTIVES:

1. To be able to comprehend the instructions and plans of the assembly manual accurately 100 per cent of the time.
2. To be able to perform the Hidden Nut Installation accurately 100

13th DAY (Continued)

per cent of the time.

TASK ANALYSIS:

1. Students are grouped and kits are placed before them.
2. Students select the directions and plans of the assembly manual, reading the instructions aloud. Teacher assists those who need help in reading.
3. Students find the required parts, materials, and tools.
4. Students cement the nuts to each part as stated in the directions.

14th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today with 75 per cent accuracy. The words are selected from "Helpful Modeling Hints" and "Hidden Nut Installation" as well as from "Step 1". They are: supports, extension, instructions, camshaft, check, trim, fit, slot, insulation, installation.
2. To be able to comprehend Phonics Rule VII which states that "tion" "xion", and "sion" often make the sound of "shun" in a word.
3. To be able to have students on the restricted schedule read, write, and spell the underlined words in Objective 1 with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Teacher introduces Phonics Rule VII and presents the word cards having words applying to the rule.
2. Teacher shows the other words and asks for word and syllable recognition and states the rule applying.
3. Students go to the chalkboard and teacher drills the class by calling

14th DAY (Continued)

each student by name and giving that student a word to write and spell. Teacher has student erase the word as soon as the word is written correctly. Each student will have had the opportunity to spell all of the ten words during this drill.

4. Students underline the syllables and write the rule number of the seven rules, referring to the list of common phonics rules.
5. Students are given a trial test using pen and paper, underlining the syllables and placing the appropriate phonics rule number beneath the underlined syllable.
6. Student on the restricted schedule may also be drilled over the abbreviations of last week, if they were unsuccessful in spelling and writing them on the last test.

15th DAY

OBJECTIVES:

1. To be able to read, write, and spell the following words accurately 75 per cent of the time: cement, securely, each, three, insert, engine, instances, pencil, necessary, vaseline.
2. To be able to comprehend and apply Phonics Rule VIII which states that "c" followed by "e", "i", or "y" usually makes the sound that "s" makes, and "g" followed by "e", "i", or "y" usually makes the sound that "j" makes.
3. To be able to have students on restricted schedule to read, write, and spell the underlined words in Objective 1.

TASK ANALYSIS:

1. Teacher presents Phonics Rule VIII on the chalkboard and writes some examples: city, general, cylinder, gyroscope, place, giblet.

15th DAY (Continued)

2. Teacher shows word cards for student recognition of words listed in Objective 1.
3. Students perform at the chalkboard, underlining syllables and placing the rule number beneath the syllable underlined. Words misspelled must be written correctly five times. Refer to phonic rules list.
4. Teacher includes yesterday's ten words in the chalkboard drill after today's words have been mastered.
5. Students are drilled over the eight phonics rules presented to date.
6. Students on the restricted schedule are drilled over the following words: camshaft, supports, cement, pencil, engine, three, insert, trim, slot, fit.

16th DAY

OBJECTIVES:

1. To be able to read, write, and spell the twenty words given from the two previous days with 80 per cent accuracy. The words are: necessary, pencil, instances, engine, supports, insert, three, each, securely, cement, tilt, slots, fit, trim, slot, check, camshaft, instructions, vaseline, spread.
2. To be able to underline the syllables to which Phonics Rule I through VIII apply and place the rule number beneath the underlined syllable with accuracy 80 per cent of the time. Refer to rules list.
3. To be able to read, write, and spell at least five of the following words with 80 per cent accuracy by students on the restricted schedule: camshaft, supports, pencil, cement, engine, trim, fit, slot, insert, three.

16th DAY (Continued)

TASK ANALYSIS:

1. Teacher presents word cards of the twenty words for word recognition drills. Students missing a word are to air write the word and state the word after air writing.
2. Students participate in chalkboard drill, writing each word given individually, underlining syllables, and entering the appropriate Phonics Rule number.
3. Students are drilled over the eight Phonics Rules.
4. Students on the restricted schedule examine the camshaft, camshaft supports, a pencil, slots in the main frame where the camshaft supports fit; compare the parts to the diagram in Step 1 of the Assembly Manual and match the word cards to the parts.

17th DAY

OBJECTIVES:

1. To be able to write and spell on pen and paper test the following twenty words with 80 per cent accuracy. The words are: vaseline, necessary, pencil, instances, instructions, engine, camshaft, supports, check, insert, slot, three, trim, each, fit, securely, slots, cement, tilt, excess.
2. To be able to test students on the restricted schedule over five or more of the underlined words in Objective 1 with student accuracy of 70 per cent.
3. To be able to read the instructions for Step 1 and interpret them with 100 per cent accuracy.

TASK ANALYSIS:

1. Teacher pronounces each spelling word twice, uses the word in a sentence,

17th DAY (Continued)

and pronounces the spelling word once more, before expressing the next spelling word.

2. Students read the instructions, tell in their own words what the instructions say.
3. Students look at the plans for Step 1 and identify the parts shown.

18th DAY

OBJECTIVES:

1. To be able to read the "Hidden Nut Installation" instructions and check with the materials used in that section to determine if the instructions have been correctly followed with 100 per cent accuracy. Students complete the application of these instructions, if the assembling is incomplete.
2. To be able to read and understand the instructions for Step 1 with 100 per cent accuracy.
3. To be able to select and identify the parts for assembly in Step 1 with 100 per cent accuracy.
4. To be able to assemble the parts according to the plans of Step 1 with 100 per cent accuracy.

TASK ANALYSIS:

1. Teacher selects students to read the instructions aloud and tell in their own words what the instructions mean.
2. Students select the parts mentioned in "Hidden Nut Installation" and carry out the instructions.
3. Students read the instructions for Step 1, look at the drawing in the plans of the assembly manual and interpret what is to be done.

18th DAY (Continued)

Students follow the instructions and complete the assembling of Step 1.

19th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today correctly 75 per cent of the time. The words are: crankshaft, six, easily, respectively, identify, styrene, assembly, cylinder, wall, segment.
2. To be able to comprehend and apply Phonics Rule IX accurately 75 per cent of the time. Phonics Rule IX stipulates that "y" as a vowel may be pronounced as a long "i", short "i", or long "e".
3. To be able to have student on the restricted schedule read, write, and spell the underlined words in Objective 1 with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Word cards are shown of today's ten words. Students drill on word recognition.
2. Teacher and students discuss what the crankshaft and cylinders are in an engine.
3. Students work at the chalkboard on today's ten words. Students having difficulty spelling and writing a word may have the word written on the chalkboard correctly, lightly erased so the letters may be recognized with some effort; then the student writes the word over the erasure, expressing each letter as it is written.
4. Students find definitions of "cylinder" and "assembly" using these words in sentences that show differing definitions. One of the

19th DAY (Continued)

sentences of each word has a definition that applies to the V8 engine.

5. Students on the restricted schedule read, write, and spell the underlined words in Objective 1 by identifying the parts in Steps 2 and 5 of the Assembly Manual. Students may assemble the crankshaft segments without cement and match word cards to parts and diagrams of parts.

20th DAY

OBJECTIVES:

1. To be able to read, write, and spell accurately 75 per cent of the time, the following ten words: connecting, rods, half-bearing, timing, gear, cap, eight, arrow, lubricate, gently.
2. To be able to identify the phonics rules applying to the words or syllables with 75 per cent accuracy.
3. To be able to identify accurately 80 per cent of the time, a word to which the given phonics rules do not apply.
4. To be able to have students on the restricted schedule read, write, and spell 75 per cent of the time the words underlined in Objective 1.

TASK ANALYSIS:

1. Students are shown word cards of today's ten words for word recognition drills.
2. Students are shown word cards to orally spell, after seeing the word long enough to pronounce.
3. Students drill at the chalkboard writing and spelling the ten words after hearing each word pronounced.
4. Students apply phonics rules to the words by underlining the syllable or word and placing the rule number below the line. Refer to rules list.

20th DAY (Continued)

5. Students are asked to state the phonics rule they have numbered.
6. Yesterday's ten words are included in the chalk drill, after today's ten words are mastered. Yesterday's ten words are: crankshaft, cylinder, six, assembly, vaseline, easily, identify, respectively, styrene, drawing.
7. Students on the restricted schedule are drilled with kit objects, word cards, Assembly Manual diagrams as well as chalkboard drills.

21st DAY

OBJECTIVES:

1. To be able to read, write, and spell the twenty words given the two days previously accurately 80 per cent of the time. The words are: crankshaft, cylinder, connecting, rods, timing, cap, gear, easily, respectively, identify, styrene, wall, half-bearing, six, assembly, drawing, eight, arrow, gently, lubricate.
2. To be able to identify the parts and parts words from the instruction booklet in Steps two and three, accurately 80 per cent of the time.

TASK ANALYSIS:

1. Students are shown word cards of the twenty words for word recognition and oral spelling drill.
2. Students write and spell the twenty words in chalkboard drills, using previously described methods.
3. Students are shown the reading instructions to read and interpret.
4. Students identify parts from the diagrams of Steps 2 and 3.
5. Students are shown the following parts to orally identify using the diagrams and word cards: main frame, camshaft supports, nuts, crankshaft segments, connecting rods, screws, half-bearings, crankshaft

21st DAY (Continued)

timing gear.

6. Students on the restricted schedule are drilled on the underlined words in Objective 1.

22nd DAY

OBJECTIVES:

1. To be able to perform with 75 per cent accuracy the writing and spelling of twenty words on a pen and paper test. The words are: rods, connecting, crankshaft, gear, timing, half-bearing, cylinder, cap, assembly, styrene, respectively, six, eight, arrow, drawing, gently, lubricate, easily, wall. The underlined words are selections for the restricted schedule test.

TASK ANALYSIS:

1. Teacher pronounces the words to be written and spelled. Teacher uses each spelling word in a sentence after it has been pronounced two times. Teacher pronounces the word to be spelled a third time, before submitting another word to be spelled.
2. Teacher takes the completed test papers for grading, counting the number right only.

23rd DAY

OBJECTIVES:

1. To be able to read and interpret the instructions of Step 2 accurately 90 per cent of the time.
2. To be able to look at diagram of Step 2 and identify the parts shown with accuracy 80 per cent of the time.
3. To be able to select parts to be used from the kit accurately 90 per cent of the time.

23rd DAY (Continued)

4. To be able to apply the instructions for Step 2 by assembling the parts as instructed correctly with 100 per cent accuracy.
5. To be able to repeat Objectives 1 through 4 for Step 3 accurately 90 per cent of the time.

TASK ANALYSIS:

1. Students read the instructions aloud for Step 2 and interpret them. Teacher may use the Neurological Impress Method where necessary.
2. Students select parts for Step 2 from the kit and compare them to the plan.
3. Students follow the directions of trimming, flashing, trial fitting without cement, taking the assembly apart, adding vegetable oil where needed and assembling the parts in Step 2. No cement should be used for Step 2, unless absolutely necessary.
4. Students repeat tasks 1 through 3 for Step 3 before assembling Step 3.
5. Teacher drills students in the identification of parts using the assemblies of Steps 1, 2, 3, after these steps are completed.

24th DAY

OBJECTIVES:

1. To be able to read, write, and spell correctly 75 per cent of the ten words introduced today. The ten words are: piston, wrist, pin, locators, screws, align, two, tighten, tight, loosen. The underlined words are for the restricted schedule.
2. To be able to identify Phonics Rule X in words or syllables of words with accuracy 75 per cent of the time. Phonics Rule X states that "igh" is often pronounced "i"; "ew", "oo", and "ue" often makes the sound in "moon"; "ou" often makes the sound in "out"; and "au" often makes

the sound found in "August".

TASK ANALYSIS:

1. Word cards are shown in word recognition drills. The air writing technique is used for reinforcement.
2. Chalkboard drills are conducted with teacher pronouncing the words assigning a different word for each student. A word missed by a student is given correctly five times. Teacher enters student's name on the back of that word card.
3. Students locate syllables to which one of Phonice Rules I through X may apply, underline the syllables, enter correct phonics rule number beneath the syllable.
4. Students find the definitions for "piston" and "pin", write two of the definitions and use the words in sentences using the definitions.
5. Students on the restricted schedule are to match word cards to parts from the kit and to the diagrams of the Assembly Manual, alongwith chalkboard drill of the underlined words in Objective 1.

25th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today with 75 per cent accuracy in drills. The words are: detail, procedure, separate, repeat, tools, toothpick, round, design, oil, right.
2. To be able to apply Phonics Rules I through X, if and where they are applicable with accuracy of 75 per cent.
3. To be able to have students on the restricted schedule read, write, and spell the underlined words with accuracy 70 per cent of the time.

25th DAY (Continued)

TASK ANALYSIS:

1. Word cards are used for word recognition drills. Students having difficulty will have their names placed on the back of cards they frequently miss.
2. Students drill at the chalkboard with teacher applying previous methods as needed.
3. Teacher includes yesterday's words after today's words are mastered: tight, tighten, two, align, screws, locators, loosen, pin, wrist, piston.
4. Students locate "separate" and "design" in the dictionary and write two definitions of each word. Students write sentences using the words according to each definition.

26th DAY

OBJECTIVES:

1. To be able to read, write, and spell the twenty words introduced the two previous days, with 80 per cent accuracy. Words are: piston, wrist, pin, tight, locators, screws, align, two, tighten, loosen, right, oil, design, round, toothpick, tools, repeat, separate, procedure, details. Underlined words are for the restricted schedule.
2. To be able to identify various parts words from looking at the diagrams of Steps 1 through 4 accurately 75 per cent of the time.

TASK ANALYSIS:

1. Students participate in word card drill. Teacher calls upon individual students to recognize the specific words they are assigned.
2. Students participate in chalkboard drills of the twenty words in preparation for tomorrow's test.

26th DAY (Continued)

3. Students participate on a trial test. Students check each other's papers. Words missed are properly written five times.
4. Students on the restricted schedule are also to be drilled, using objects from the kit and diagrams of Step 2 and 3 in the Assembly Manual.

27th DAY

OBJECTIVES:

1. To be able to perform on a pen and paper test of twenty words with 80 per cent accuracy. The words are: pin, wrist, piston, screws, oil, toothpick, two, tight, locators, align, right, tighten, loosen, design, round, procedure, detail, separate, repeat, tools. Underlined words are selected for the restricted schedule.

TASK ANALYSIS:

1. Teacher gives a pen and paper test by orally expressing each word and using each word in an example sentence.
2. The number of words a student is to spell of the twenty given is predetermined by the teacher with the student.
3. Teacher grades papers according to the number right.
4. Teacher distributes the dealer's billing sheet and drills class on the meaning of each heading.
5. Teacher may test over some or all of the underlined words in Objective 1 for students on the restricted schedule.

28th DAY

OBJECTIVES:

1. To be able to read and interpret the meaning of the instructions for Step 4 with 100 per cent accuracy.

28th DAY (Continued)

2. To be able to apply the instructions to Step 4 of the Assembly Manual accurately 100 per cent of the time.
3. To be able to identify parts mentioned in Step 4 and apply the instructions or assembly.

TASK ANALYSIS:

1. Students read the instructions and put them into their own words demonstrating comprehension.
2. Students trim flash from parts, put the parts together to determine fit before cementing, take them apart, then cement together where instructed.
3. Students assemble in sequence according to instructions.

29th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten introduced words in drills accurately 75 per cent of the time (See Task Analysis 1).
2. To be able to comprehend and apply Phonics Rule XI with accuracy 75 per cent of the time. Phonics Rule XI stipulates "le" at the end of a word and preceded by a consonant usually has the sound of "ul" as in "hull".
3. To be able to have students on the restricted schedule read, write, and spell the underlined words in Task Analysis 1 accurately 70 per cent of the time.

TASK ANALYSIS:

1. Teacher shows the following word cards: visible, disassemble, reassemble, inaccessible, single, enable, middle, vegetable, short, mark.

29th DAY (Continued)

2. Students are introduced to Phonics Rule XI.
3. Students perform word recognition drill, air writing for specific students. Teacher records names of those on the back of the word cards of words students frequently miss.
4. Students drill at the chalkboard, writing and spelling the ten words.
5. Students underline syllables or words and enter the appropriate Phonics Rule number beneath the line. Refer to rules list.

30th DAY

OBJECTIVES:

1. To be able to read, write, and spell accurately 75 per cent of the time the following ten words: bottom, rib, inset, between, rear, freely, rotation, outer, pair, ridges.
2. To be able to apply various phonics rules to syllables or words accurately 75 per cent of the time.
3. To be able to have students on the restricted schedule read, write, and spell the underlined words in Objective 1 accurately 70 per cent of the time.

TASK ANALYSIS:

1. Students perform word recognition drill as teacher shows word cards of today's ten words.
2. Students perform chalkboard drills of the ten words, copying over corrected words five times, if they have misspelled a word.
3. After sufficient mastery of today's ten words, yesterday's ten words are added to the chalkboard drill. These words are: mark, vegetable, pointing, middle, enable, single, inaccessible, reassemble, disassemble,

30th DAY (Continued)

visible.

4. Words often missed by a student are having that student's name entered on the back of the word card.
5. Students perform on a trial test, using pen and paper.
6. Students on the restricted schedule refer to Step 5 of the Assembly Manual to match words to the diagram.

31st DAY

OBJECTIVES:

1. To be able to read, write, and spell the twenty words of the two previous days with accuracy in drills 80 per cent of the time. The words are: mark, rib, bottom, ridges, pointing, enable, middle, single, inaccessible, vegetable, reassembly, visible, disassemble, pair, freely, rear, inset, between, rotation, outer.
2. To be able to apply phonics rules according to the syllables in the words with accuracy 80 per cent of the time.
3. To be able to locate specified words in a dictionary and write sentence using the words that demonstrate the different definitions with accuracy of 75 per cent.
4. To be able to have students on the restricted schedule to read, write, and spell the underlined words with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Teacher uses word cards for word recognition drills.
2. Teacher drills selected students in recital of the eleven phonics rules previously presented.
3. Students participate in chalkboard drills, writing and spelling the twenty words.

31st DAY (Continued)

4. Students each assigned a different word to locate in the dictionary, write two of the word's definitions, and use the word in sentences demonstrating each definition.
5. Students on the restricted schedule may match word cards to Step 5 diagram of the Assembly Manual and to kit parts used in Step 5.

32nd DAY

OBJECTIVES:

1. To be able to have students participate in a pen and paper test of twenty spelling words with 80 per cent accuracy. The words are as follows: rib, bottom, mark, ridges, pointing, enable, middle, single, reassemble, vegetable, inaccessible, visible, disassemble, freely, pair, rear, between, inset, outer, rotation.
2. To be able to select from the underlined words in Objective 1, the words for students in the restricted schedule with student success of 70 per cent.
3. To be able to read the instructions and interpret accurately 75 per cent of the time.

TASK ANALYSIS:

1. Students write each word given for spelling by the teacher according to the teacher's directions.
2. Students read the instructions for Step 5, then look at the Assembly Manual; students tell in their own words what they are to do.
3. Teacher grades according to the number of correct words.

33rd DAY

OBJECTIVES:

1. To be able to identify the various parts to assemble in Step 5 with

33rd DAY (Continued)

100 per cent accuracy.

2. To be able to comprehend and apply the directions from the instructions accurately 100 per cent of the time.
3. To be able to apply the description from the inset of the Assembly Manual with 100 per cent accuracy.

TASK ANALYSIS:

1. Students read the instructions of the instructional booklet and the diagram information from the Assembly Manual then assemble with 100 per cent accuracy.
2. Students assemble parts prior to cementing to determine fit, then disassemble.
3. Students apply cement to specified parts, fit the parts correctly and hold the parts together, until the cement dries.
4. Students rotate the crankshaft by turning the Crankshaft Timing Gear to determine the freedom of movement of the various parts. Students check closely for any "handing" or "binding" of parts to other parts.

34th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words accurately 75 per cent of the time. The words are: fasten, snap, lock, press, slide, diagonal, seat, five, pressing, pressed.
2. To be able to apply appropriate phonics rules to the syllables and words accurately 75 per cent of the time. Refer to rules list.
3. To be able to have students on the restricted schedule read, write, and spell from the underlined words in Objective 1, with accuracy 70 per cent of the time.

34th DAY (Continued)

TASK ANALYSIS:

1. Teacher initiates word recognition drill using word cards, asking for pronounciation of the word, expressing the word, selected students air write specified words.
2. Students drill at the chalkboard, writing the words pronounced for them.
3. Students perform ghost writing method of words missed.
4. Students are drilled over engine parts that have been introduced thusfar by identifying them in the diagrams of the Assembly Manual.

35th DAY

OBJECTIVES:

1. To be able to read, write, and spell the following ten words accurately 75 per cent of the time: extend, short, downward, lightening, points, squarely, locks, together, engage, designated.
2. To be able to read the instructions for Step 6 and the directions for Step 6 in the Assembly Manual with accuracy 75 per cent of the time.
3. To be able to have students on the restricted schedule read, write, and spell the underlined words in Objective 1 with 70 per cent accuracy.

TASK ANALYSIS:

1. Teacher conducts word recognition drills with word cards.
2. Students participate in chalkboard drills. Students have different words to write from other students at a given time, instead of all students writing the same word at the same time.

35th DAY (Continued)

3. Students underline syllables and enter the appropriate phonics rule number in chalkboard drill. Refer to rules list.
4. Teacher includes yesterday's ten words in the drill after today's words are mastered. Yesterday's words include: fasten, snap, lock, press, slide, diagonal, seat, five, pressing, pressed.
5. Students participate in a trial test, using pen and paper.

36th DAY

OBJECTIVES:

1. To be able to read, write, and spell twenty words introduced the two previous days accurately 80 per cent of the time in drills. The words are: lock, press, slide, snap, fasten, seat, diagonal, pressed, five, pressing, short, extend, points, downward, lightening, locks, squarely, together, designated, engage.
2. To be able to express the appropriate phonics rule for a specified syllable with 75 per cent accuracy.
3. To be able to have students on the restricted schedule to read, write, and spell some or all of the underlined words in Objective 1, with 70 per cent accuracy.

TASK ANALYSIS:

1. Students participate in word card drill.
2. Students drill at the chalkboard, writing, and spelling words,
3. Teacher selects syllables in words for students to underline, then asks the student to recite the applicable phonics rule.
4. Students participate in a trial test, using pen and paper.

37th DAY

OBJECTIVES:

1. To be able to perform in a spelling test using pen and paper with 80 per cent accuracy. The words are given with underlined words first, in this order: snap, press, lock, slide, fasten, diagonal, seat, five, pressed, locks, short, pressing, squarely, points, extend, downward, designated, lightening, engage, together.

TASK ANALYSIS:

1. Teacher gives twenty word spelling test.
2. Teacher grades according to the number right. Student's names are entered on the back of word cards of words missed.
3. Students read directions for Step 6 and apply them to Step 6 of the Assembly Manual.
4. Students on the restricted schedule may be given some or all of the underlined words in Objective 1.

38th DAY

OBJECTIVES:

1. To be able to read and interpret the instructions with 90 per cent accuracy.
2. To be able to identify the parts for assembly with 100 per cent accuracy.
3. To be able to assemble the parts appropriately with 100 per cent accuracy.

TASK ANALYSIS:

1. Students read and interpret the instructions in their own words.
2. Students identify the parts for assembly in Step 6 of the Assembly Manual.

38th DAY (Continued)

3. Students put the parts together without cement for a trial fit.
4. Students make necessary adjustments under the observation of the teacher.
5. Students cement and assemble the parts of Step 6 according to the instructions.
6. Students participate in parts recognition drill as teacher points to part of the assembled engine for specific student to identify.

39th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today with accuracy of 75 per cent. The words are: notches, rabetted, bevel, risers, retainer, rectangular, diameter, guide, lower, base.
2. To be able to apply appropriate phonics rules with 75 per cent accuracy.
3. To be able to have students on the restricted schedule read, write, and spell the underlined words in Objective 1 with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Students are shown word cards for word recognition and air writing.
2. Students participate in chalkboard spelling drills.
3. Students underline syllables selected by the teacher then students give the phonics rule.
4. Students on the restricted schedule use the Assembly Manual Step 7 and parts from the kit to aid them in learning their words.

40th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today with 75 per cent accuracy. The words are: housing, brace, flywheel, converter, collar, rim, inboard, upper, perimeter, outward.
2. To be able to read and interpret the instructions for Steps 7, 8, and 9 with comprehension 75 per cent of the time.
3. To be able to have students on the restricted schedule read, write, and spell the underlined words in Objective 1 accurately 70 per cent of the time.

TASK ANALYSIS:

1. Students participate in word recognition, using word cards.
2. Students participate in chalkboard drills. Teacher includes yesterday's ten words after mastery of today's words. Yesterday's words are: risers, bevel, retainer, notches, rabetted, rectangular, guide, diameter, base, lower.
3. Students underline selected syllables and give the applicable phonics rule, using list of rules if necessary.
4. Students read the instructions for Steps 7, 8, and 9, and teacher asks students to explain the instructions.
5. Students on the restricted schedule will examine the parts for assembly in Steps 7, 8, and 9, identify the parts, match the word cards to the parts, and participate in chalkboard drills.

41st DAY

OBJECTIVES:

1. To be able to read, write, and spell twenty words in drills accurately 80 per cent of the time. The words are: flywheel, housing, base,

41st DAY (Continued)

converter, bevel, brace, rim, inboard, perimeter, upper, outward, rabetted, notches, risers, rectangular, guide, lower, diameter, retainer, collar.

2. To be able to identify syllables and state phonics rules accurately 80 per cent of the time.
3. To be able to have students on the restricted schedule read, write, and spell the underlined words in Objective 1, accurately in drills 80 per cent of the time.

TASK ANALYSIS:

1. Teacher shows word cards during word recognition drills. Selected students participate in air writing.
2. Students participate in chalkboard drills, writing, and spelling words as they are pronounced by the teacher.
3. Students use the dictionary to find word meanings: students originate sentences that demonstrate differing definitions for each word.
4. Students use the Assembly Manual, Steps 7, 8, and 9 to associate words with parts.

42nd DAY

OBJECTIVES:

1. To be able to participate in a pen and paper test with 80 per cent accuracy in spelling. The words are: flywheel, bevel, base, converter, housing, brace, retainer, notches, rim, inboard, perimeter, upper, outward, rabetted, risers, rectangular, guide, lower, diameter, collar.
2. To be able to identify parts shown in diagrams from Step 1 through Step 9 of the Assembly Manual with 80 per cent accuracy.
3. To be able to have students on the restricted schedule participate

in the test with selections from the underlined words in Objective 1.

TASK ANALYSIS:

1. Students are given their spelling test with teacher pronouncing each spelling word twice, using the word in a sentence, then pronouncing the word a third time; before expressing the next spelling word.
2. After the students complete the spelling test, students review the identification of parts from the diagrams in the Assembly Manual including Steps 1 through 9.
3. Teacher grades the spelling test on the basis of the words correctly written. Words missed are placed on the back of the appropriate word cards.

43rd DAY

OBJECTIVES:

1. To be able to read and interpret instructions in the instructions booklet and diagrams in the Assembly Manual with accuracy 90 per cent of the time.
2. To be able to select and assemble parts in Steps 7, 8, and 9 with accuracy of 100 per cent.

TASK ANALYSIS:

1. Teacher involves class in reading aloud and interpreting instructions for assembly.
2. Students select parts for assembly, trimming flash, and trial fitting the parts.
3. Students assemble and cement parts as directed in Steps 7 through 9, aligning timing marks as shown in Step 7, Detail A.

43rd DAY (Continued)

4. Students drill in parts identification of the concrete parts assembled.

44th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today, with accuracy 75 per cent of the time. The ten words are: bell, transmission, pump, switch, brass, wire, battery, button, properly, insulation.
2. To be able to identify syllables according to phonics rule with accuracy of 75 per cent.

TASK ANALYSIS:

1. Students participate in word recognition drill of today's ten words.
2. Students participate in chalkboard drills writing, spelling, and applying phonics rules to syllables.
3. Students write definitions of selected words and use the words in sentences applying the definitions.
4. Students on the restricted schedule are to drill with the assigned underlined words only.
4. Students on the restricted schedule are to examine and identify objects in the kit for Steps 10, 11, and 12, and match with the correct word cards.

45th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words used in Steps 10, 11, and 12 instructions with spelling accuracy 75 per cent of the time. The words are as follows: screen, pumper, alignment, edge,

45th DAY (Continued)

contact, bend, box, eyelets, groove, bared.

2. To be able to identify parts words from the diagrams of Steps 1 through 12 in the Assembly Manual with 75 per cent accuracy.

TASK ANALYSIS:

1. Teacher provides word recognition and air writing drills.
2. Teacher provides chalkboard drill of the ten words, until mastery.
3. Teacher includes yesterday's ten words in the chalkboard drill after mastery of today's ten words. The additional words are: transmission, bell, pump, switch, button, brass, wire, battery, insulation, properly.
4. Students find selected words in the dictionary, write a definition, and a sentence using the word as it is defined.
5. Students on the restricted schedule use objects from the kit and diagrams in the Assembly Manual to drill with word cards of the underlined words in Objective 1.

46th DAY

OBJECTIVES:

1. To be able to read, write, and spell twenty words initiated during the two previous day's with 80 per cent accuracy. The twenty words are: bell, pump, transmission, switch, properly, alignment, button, insulation, brass, wire, screen, pumper, battery, box, eyelets, groove, edge, contact, bend, bared.
2. To be able to drill students, participating with a restricted schedule on the underlined words with reading, writing, and spelling accuracy of 70 per cent.

46th DAY (Continued)

TASK ANALYSIS:

1. Teacher shows word cards to students for word recognition.
2. Students participate in chalkboard drills.
3. Students showing sufficient mastery in drills are assigned words to use in sentences. Students tell the meaning of the word as it is used in the sentence they originate, then locate the word in a dictionary and find the definition for the word as the word is used in the student's sentence.
4. Students on a restricted schedule may use kit objects and Steps 10, 11, and 12 of the Assembly Manual for word/object recognition drill, followed by the chalkboard drill.

47th DAY

OBJECTIVES:

1. To be able to conduct a spelling test with students using pen and paper, spelling and writing the words with 80 per cent accuracy.
2. To be able to read and interpret the instructions for Steps 10, 11, and 12 with accurate interpretation 80 per cent of the time.
3. To be able to test students on the restricted schedule with some or all of the underlined spelling words in Task Analysis 1, with writing and spelling accuracy of 70 per cent.

TASK ANALYSIS:

1. Teacher gives a spelling test of the following twenty words: pump, bell, battery, transmission, box, wire, switch, button, screen, contact, pumper, eyelets, bend, brass, insulation alignment, properly, groove, edge, bared.

47th DAY (Continued)

2. Teacher has students read and interpret the instructions of Steps 10, 11, and 12, also using the diagrams in the Assembly Manual for parts recognition.

48th DAY

OBJECTIVES:

1. To be able to read and interpret the instructions with 100 per cent accuracy of interpretation. The Neurological Impress Method may be used with certain students.
2. To be able to apply the instructions to assembling model parts with accuracy of 100 per cent.

TASK ANALYSIS:

1. Teacher has students read the instructions for Step 10 and tell in their own words what they are to do. Students observe the diagrams of parts in Step 10 of the Assembly Manual and compare the model parts to the diagrams.
2. Students select for assembling, trimming, and determining proper fit, then cementing and assembling as directed.
3. Students repeat the procedure for Step 11.
4. Students read and apply the directions for Step 12 in the proper sequence.
5. Students observe the diagrams including Detail A of Step 12 of the Assembly Manual, taking care to measure, cut, and connect wires as directed.
6. Students set aside assembled parts for future use.

49th DAY

OBJECTIVES:

1. To be able to introduce ten words for reading, spelling, and writing with accuracy in drills 75 per cent of the time. The words are: *starter*, *motor*, *pinion*, gears, case, shaft, connect, order, alphabetical, thread.
2. To be able to conduct parts identification drill of previously assembled model parts with 80 per cent accuracy of identification.
3. To be able to have students on the restricted schedule read, write, and spell the underlined words in Objective 1 with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Students are shown word cards for word recognition drills. Students having difficulty with specific words have their names written on the back of the word cards.
2. Students participate in chalkboard drills of the ten parts words, as conducted in previous chalkboard drills.
3. Students identify the parts shown in Step 13 of the *Assembly Manual.* Teacher calls attention to 44 and 47A both of which are pinion gears.
4. Students on restricted schedule examine objects from the kit for Step 13, identifying them by name and finding the correct word card (s) for each.

50th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today with 75 per cent accuracy in writing and spelling drills. The words are:

50th DAY (Continued)

set, disconnect, shafts, electric, plate, twisting, connected, coil, protruding, shaped.

2. To be able to read, write, and spell yesterday's ten words with 75 per cent accuracy in writing and spelling drill. These words are: motor, starter, pinion, case, connect, order, shaft, gears, alphabetical, thread.
3. To be able to have students on the restricted schedule to read, write, and spell the underlined words with 70 per cent accuracy.

TASK ANALYSIS:

1. Teacher shows word cards of today's words for word recognition drill and air writing.
2. Teacher conducts spell down of today's words followed by yesterday's words.
3. Students participate in chalkboard drill writing and spelling today's words, then include yesterday's words. Assign the following words for restricted scheduled students: coil, starter, gears, case, electric.

51st DAY

OBJECTIVES:

1. To be able to read, write, and spell the twenty words, introduced the previous two days, accurately 80 per cent of the time in drills. The twenty words are to be given with the underlined words first: starter, electric, coil, motor, pinion, shafts, plate, gears, case, shaft, connected, alphabetical, order, thread, disconnect, set, protruding, shaped, twisting, connect.
2. To be able to underline and state the phonics rule for specific syllables with 75 per cent accuracy during chalkboard drills.

51st DAY (Continued)

3. To be able to have students on a restricted schedule drill on the underlined words with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Students participate in word recognition drill using word cards.
2. Students participate in chalkboard drills, writing, and spelling accurately 80 per cent of the time.
3. Students underline syllables selected by the teacher and students orally give the phonics rule applying to the syllable.

52nd DAY

OBJECTIVES:

1. To be able to conduct a pen and paper spelling and writing test with students accuracy of 80 per cent. The spelling words to be given are as follows: case, starter, coil, gears, electric, motor, thread, disconnect, shafts, set, plate, protruding, twisting, connect, shaped, connected, pinion, alphabetical, order, shaft.
2. To be able to read Step 13 of the instructions with student interpretations accurately 75 per cent of the time.
3. To be able to have students on the restricted schedule tested with selections from the underlined words only, with student accuracy of 70 per cent.

TASK ANALYSIS:

1. Teacher pronounces each spelling word two times before giving another spelling word.
2. Students write the spelling, keeping spelling paper covered and maintaining silence.
3. Teacher gathers papers to be graded according to the number correct.

52nd DAY (Continued)

Students names are entered on the back of word cards, if they misspell words.

4. Teacher conducts reading from the book of instructions, using the Neurological Impress Method if necessary. Teacher questions reader about what was read.

53rd DAY

OBJECTIVES:

1. To be able to comprehend and apply the directions of assembly from the Instructional Booklet and Assembly Manual with 100 per cent accuracy.

TASK ANALYSIS:

1. Students read the instructions for Step 13 and select the parts for assembly.
2. Students observe the need for trimming gears and other parts.
3. Students recognize the difference between the two Pinion Gears 44 and 47A.
4. Students apply vaseline to gears 45A, 46B, 47C for quieter operation.
5. Students test motor after assembling by pressing the terminals to opposite ends of a battery.

54th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today with writing accuracy of 75 per cent by the end of drills. The ten words are: pan, plug, dip, stick, portion, attach, drain, turn, cover, vaseline.

54th DAY (Continued)

2. To be able to identify syllables and apply the appropriate phonics rule with accuracy 75 per cent of the time.
3. To be able to have students on restricted schedule to read, write, and spell the underlined words only with student accuracy of 70 per cent.

TASK ANALYSIS:

1. Teacher introduces ten words, using word cards in word recognition drill. Teacher says the words, if students do not recognize it. Students repeat the word and air write the word.
2. Students participate in chalkboard drill.
3. Students participate in trial test. Teacher assigns words to find the syllables and writes the phonics rule beside the word. Refer to rules list.
4. Students on restricted schedule identify objects with their names in Step 14 of the Assembly Manual; objects from the kit are next for identification and matching with the appropriate word cards.

55th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words with writing and spelling accuracy of 75 per cent. The words are: mesh, assembly, assembled, unscrew, operation, apply, notice, disengage, holes, teeth.
2. To be able to find and write two definitions of "mesh" and "teeth" with 100 per cent accuracy.
3. To be able to have students on the restricted schedule, read, write, and spell the words underlined on Objective 1, with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Teacher shows word cards of today's ten words, and students respond

55th DAY (Continued)

in word recognition drill.

2. Teacher has students at the chalkboard for drill in listening, writing, and spelling.
3. Teacher includes yesterday's ten words in chalkboard drill. These words are: dip, stick, drain, plug, pan, engine, screws, vaseline, attach, turn.
4. Teacher assigns dictionary skill work, requiring finding and writing two definitions for each word and originating sentences using these words and demonstrating the differing definitions. Example: The child's teeth were brushed with toothpaste. The gears' teeth were worn.
5. Students on the restricted schedule are to manipulate kit objects to demonstrate gear teeth meshing, screwing and unscrewing screws. Word cards are used to identify each of the two manipulations.

56th DAY

OBJECTIVES:

1. To be able to read, write, and spell the twenty words of the two previous day's with spelling and writing accuracy 80 per cent of the time in drills. The twenty words are: pan, stick, drain, dip, plug, engine, cover, vaseline, turn, attach, mesh, apply, assembly, notice, unscrew, assembled, operation, holes, teeth, disengage.

TASK ANALYSIS:

1. Word cards are used in word recognition drill. Teacher introduces each word; students repeat the word. Teacher then selects students for identifying the words without teacher help.
2. Chalkboard drills are performed by students in writing and spelling

56th DAY (Continued)

the words pronounced by the teacher.

3. Teacher selects words for recognition of phonics rules. Students underline syllables; write or state rule. Refer to rules list if necessary.
4. Students on the restricted schedule are to participate in word recognition and chalkboard drills with the underlined words in Objective 1 only.

57th DAY

OBJECTIVES:

1. To be able to administer a pen and paper test of twenty spelling words words with student accuracy of 80 per cent. The twenty words are to be given in the following order: dip, stick, drain, pan, plug, cover, teeth, mesh, vaseline, attach, apply, notice, assembly, unscrew, operation, engine, holes, assembled, disengage, turn.
2. To be able to interpret the instructions for Steps 14 and 15 with accuracy 75 per cent of the time.
3. To be able to have students on restricted schedule tested over selections or all of the underlined words in Objective 1.

TASK ANALYSIS:

1. Teacher administers a pen and paper test of spelling words. The number of words given depend upon the teacher's assignment for individual students.
2. Teacher conducts reading of material from the instruction for Steps 14 and 15, asking meanings of sentences students have read.

58th DAY

OBJECTIVES:

1. To be able to read and interpret the directions for assembly, using

58th DAY (Continued)

the Instructional Book and Assembly Manual. Comprehension is evident 95 per cent of the time.

2. To be able to apply the directions, assembling concrete model parts accurately 100 per cent of the time.

TASK ANALYSIS:

1. Teacher has students select parts needed to assemble Steps 14 and 15.
2. Students read the instructions, interpret them aloud, then apply the directions of assembly for Step 14 followed by Step 15.
3. Students are drilled in recognizing various concrete parts as teacher points to a part and asks a student the name of the part.

59th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today in drills with spelling accuracy of 75 per cent. The ten words are: manifold, filter, cleaner, air, intake, carburetor, inboard, outboard, clockwise, reverse.
2. To be able to have students on restricted schedule drill on the underlined words in Objective 1, with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Word recognition drills are conducted. Teacher points out the various compound words. Teacher points out why "manifold" is not a compound word -- because "man" and "fold" are separated by "i" and is pronounced as "man ə fold".
2. Chalkboard drills are conducted with students writing a word correctly five times, if the word is missed in three attempts.

59th DAY (Continued)

3. Students are given a trial pen and paper test. The five words given first are those assigned to students on the restricted schedule.
4. Students look at the Assembly Manual for a parts recognition drill of Steps 16, 17, and 18.
5. Teacher selects kit objects for Steps 16, 17, and 18 for engine parts identification drills, orally and with word cards, followed by chalkboard drill.

60th DAY

OBJECTIVES:

1. To be able to introduce ten new words with students on restricted schedule having the underlined words only, for reading, writing, and spelling with accuracy 75 per cent of the time. The words are: stand, hookup, rotate, exhaust, water, lower, wall, counter-clockwise, edges, operate.
2. To be able to find definitions of the following words and correctly interpret them with 90 per cent accuracy. The words are: counter-clockwise, rotate, and exhaust.

TASK ANALYSIS:

1. Teacher shows word cards, pronounces each word, students respond in unison.
2. After all of the words are shown, teacher selects a student, shows a card for the individual student to read.
3. Students go to the chalkboard and participate in writing and spelling drill of the ten words.
4. Yesterday's ten words are included in the chalkboard drill, after today's words are mastered; they are: air, filter, cleaner, intake,

60th DAY (Continued)

manifold, carburetor, outboard, reverse, inboard, clockwise.

5. Students demonstrate the word meanings for rotate, clockwise, counter-clockwise by bodily movements. Teacher may give an explanation and examples of the three words by using a clock. RPM may also be explained (revolutions per minute).

61st DAY

OBJECTIVES:

1. To be able to read, write, and spell twenty words with accuracy in drills 80 per cent of the time. The twenty words are: exhaust, manifold, intake, cleaner, filter, carburetor, air, inboard, outboard, reverse, clockwise, counter-clockwise, stand, rotate, hookup, lower, water, edges, operate, wall.
2. To be able to read the directions for Steps 16, 17, and 18 in the Instructional Booklet, using the Neurological Impress Method when necessary, and to interpret accurately 80 per cent of the time during the reading drill. The Assembly Booklet may be used to assist the student in word recognition.
3. To be able to have students on restricted schedule drill with the underlined words in Objective 1 with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Students are shown word cards for word recognition drills.
2. Students are given chalkboard drill; spell and write words on the chalkboard. Remember students on restricted schedules may need only the first five words for spelling and writing.
3. After mastery of spelling words, students read and interpret the instructions of Steps 16 through 18.

61st DAY (Continued)

4. Parts are manipulated by students on restricted schedule for Steps 16, 17, and 18 of the Assembly Manual. Drill includes vocal identification and matching word cards to assembly parts.

62nd DAY

OBJECTIVES:

1. To be able to write and spell yesterday's twenty words with 80 per cent accuracy on a test, with students on restricted schedules to use the underlined words.

TASK ANALYSIS:

1. Words are given as follows: filter, intake, exhaust, manifold, cleaner, carburetor, air, reverse, outboard, inboard, clockwise, stand, counterclockwise, hookup, water, edges, wall, rotate, lower, operate.
2. Teacher grades on the basis of the number correct.
3. Teacher enters words missed under name of student on a teacher's list.

63rd DAY

OBJECTIVES:

1. To be able to apply the instructions of Steps 16, 17, and 18 with 100 per cent accuracy of assembly.

TASK ANALYSIS:

1. Students use the Instruction Booklet, Assembly Manual, select and assemble the parts as directed.

64th DAY

OBJECTIVES:

1. To introduce words (underlined words are for students on restricted schedule) as follows for Steps 19 and 20 with 75% accuracy in reading, spelling, and writing: fan, water, pump, hub, pulley, hole, protrude

impeller, sleeve, shaft, surface.

2. To be able to find "fan" and "shaft" in dictionary, write two definitions for each word with 100 per cent accuracy.
3. To be able to read the instructions of Step 19 in the Instruction Manual, comprehending accurately 75 per cent of the time.

TASK ANALYSIS:

1. Use word cards for drills. Teacher shows and pronounces each word, then selects a card for student to read.
2. Students go to the chalkboard and participate in writing and spelling drills. Students on restricted schedules may use the following terms for drill: Water Pump, fan, and impeller.
3. After demonstrating mastery in reading, writing, and spelling, students participate in dictionary skills development.
4. Students read the instructions for Step 19 and using the Assembly Booklet, tell what they are to do when they are to assemble the model.
5. Students on restricted schedule manipulate assembly parts, identifying them by name and matching word cards to assembly parts.

65th DAY

OBJECTIVES:

1. To be able to read, write, and spell with 75 per cent accuracy the following ten words of Step 20, with underlined words also for students having restrictes schedules: generator, ring, bracket, adjustable, end, drop, attach, small, larger, circumference.
2. To be able to locate in the dictionary and write the definitions for "ring" and "circumference" with 100 per cent accuracy.

65th DAY (Continued)

TASK ANALYSIS:

1. Teacher and students participate in word card recognition drill.
2. Students spell and write today's ten words on the chalkboard in drills.
3. Students spell and write yesterday's ten words in the chalkboard drill, after today's words are mastered. The words are: hub, fan, impeller, pulley, water, pump, hole, sleeve, surface, shaft.
4. Students on restricted schedules of five or more words a week, are to spell and write the following in drills: impeller, fan, pulley, generator, water, pump, sleeve.
5. After mastery is obtained from drills of the twenty words or terms, students use the dictionary to locate and write definitions of "ring" and "circumference" using the words in two sentences each, demonstrating more than one meaning of the word.
6. Students on restricted schedule drill with assembly parts, matching with appropriate word cards and participate in chalkboard drill.

66th DAY

OBJECTIVES:

1. To be able to read, write, and spell the twenty words introduced the two previous days. The underlined words given are also for the students with the restricted schedule with expected accuracy of 80 per cent. The words are: fan, water, pump, pulley, impeller, generator, protrude, hole, hub, sleeve, shaft, surface, ring, bracket, end, drop, adjustable, circumference, larger, small, attach.
2. To be able to read, with accuracy of understanding 80 per cent of the time, the directions of Steps 19 and 20 found in the instructions. Students may also refer to the Assembly Booklet.

66th DAY (Continued)

TASK ANALYSIS:

1. Students review, using word cards of the twenty words. Students who have only five or more words review the underlined words of Objective 1.
2. Students drill at the chalkboard writing and spelling the words as they are called by name and the word is pronounced.
3. Students participate in a trial pen and paper test.

67th DAY

OBJECTIVES:

1. To be able to perform on a written spelling test with 80 per cent accuracy the following words. Students on restricted schedules use the underlined words. The words are: fan, water, pump, pulley, generator, impeller, end, bracket, small, circumference, attach, drop, adjustable, larger, hole, protrude, sleeve, hub, surface, ring, shaft.
2. To be able to read the directions for Steps 19 and 20 with correct comprehension 80 per cent of the time.

TASK ANALYSIS:

1. Teacher pronounces each spelling word twice, uses the word in a sentence, and pronounces the word a third and final time.
2. Teacher grades on the basis of how many words are correct.
3. Teacher lists words missed under each student's name.

68th DAY

OBJECTIVES:

1. To be able to read and correctly interpret and apply the information to concrete parts of Steps 19 and 20 requiring assembly.

TASK ANALYSIS:

1. Students identify the concrete parts by name and apply the directions

68th DAY (Continued)

toward assembly of the model.

2. Students drill over identification of parts that have been assembled thusfar.

69th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words with 75 per cent accuracy of Step 21 introduced today. The words are: fuel, vibration, damper, circle, two, actuator, arm, timing, gears, cover, retainer, distance, short, area.
2. To be able to find "damper" and "actuator" in the dictionary and write the definitions of each word as it is used in the engine with 100 per cent accuracy.
3. To be able to have students on restricted schedule read, write, and spell the underlined words with 70 per cent accuracy.

TASK ANALYSIS:

1. Students participate in word recognition, using word cards and air writing technique.
2. Students drill at the chalkboard, writing and spelling each word as it is called to them.
3. Students on restricted spelling words are to drill on "fuel", "actuator arm" and "vibration damper".
4. Students seek word meanings of "damper" and "actuator".
5. Students make sentences using "damper" and "actuator" properly in sentences.
6. Students look in the Assembly Manual at Step 21 and identify the part shown with the parts words.

70th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words introduced today in the following order: head, sixteen, cylinder, valve, stem, spacer, Rocker, Arms, spring, depress, hexagon, large, with 75 per cent accuracy. Students with restricted words should learn the underlined words.
2. To be able to read, write, and spell yesterdays words with 75 per cent accuracy. The words are: fuel, circle, vibration, damper, two, actuator, arm, timing, gears, cover, distance, short, area, retainer.

TASK ANALYSIS:

1. Students perform word recognition drill of the words introduced today using word cards.
2. Students drill at the chalkboard, writing and spelling the words as they are given to them.
3. Teacher has students look at the plans in the Assembly Booklet and identify the parts pictured in Step 22 to the parts words given for study.
4. Teacher selects the parts for Step 22 and have students match the parts to the plan and parts to the parts words.

71st DAY

OBJECTIVES:

1. To be able to read, write, and spell the words introduced the two previous days with 80 per cent accuracy. The words and assembly parts terms are as follows: rocker, arms, valve, stem, cylinder, spacer, vibration, damper, head, sixteen, actuator arm, fuel, two, circle, sixteen, large, spring, hexagon, depress.

71st DAY (Continued)

Students on the restricted schedule should learn the following selections: spacer, rocker arms, valve stem, cylinder, vibration damper, spring, timing gears cover.

TASK ANALYSIS:

1. Student will participate in word recognition drill using word cards.
2. Students will initiate the calling out of the words, and teacher will express the words that the students do not recognize.
3. Students will participate in chalkboard drill with the teacher pronouncing the word and for one student called out by name so that each student will have different words to spell before assigning the first student a second word. This drill will continue until each student has spelled all the words assigned to them.

72nd DAY

OBJECTIVES:

1. To be able to write and spell on a pen and paper test the following twenty words or terms with underlined assembly parts terms for students on the restricted schedule with 80 per cent accuracy: valve stem, spacer, rocker arms, cylinder, vibration damper, actuator arm, sixteen, fuel, circle, two, hexagon, spring, large, depress, head, timing gears cover, retainer, short, distance, area.
2. To be able to read and then interpret with 90 per cent accuracy the instructions for Steps 21 and 22 from the Instructional Booklet.
3. To be able to identify the parts pictured in Steps 21 and 22 of the Assembly Manual with 100 per cent accuracy.

TASK ANALYSIS:

1. Students participate in writing and spelling test.

72nd DAY (Continued)

2. Students read and interpret the directions in the Instructional Booklet. The Neurological Impress Method is used when necessary.

73rd DAY

OBJECTIVES:

1. To be able to read the Instructional Booklet and look at the Assembly Manual then apply the instructions to assemble Steps 21 and 22 with 100 per cent accuracy.

TASK ANALYSIS:

1. Students read the instructions, look at the Assembly Manual and select the parts for assembling Step 21 followed by Step 22.
2. Students are reviewed over the parts assembled by teacher pointing to various parts and asking what they are.

74th DAY

OBJECTIVES:

1. To be able to read, write, and spell the following ten words or terms introduced today with accuracy 75 per cent of the time: push rod, starter, motor, guide ring, valves, disconnect, side, operating, remove, determine, correctly. Students have a restricted schedule of words or terms to spell are to learn the underlined terms.
2. To be able to read the instructions for Step 23 from the Instruction Booklet and interpret with 90 per cent accuracy. The Neurological Impress Method may be used with some students.

TASK ANALYSIS:

1. Students participate in word recognition drills, using word cards, teacher stating the word or words on the card, students reply; then word cards are shown, without teacher expressing the words, and students

74th DAY (Continued)

are called upon to read the cards.

2. Students drill at the chalkboard with teacher calling a student's name, giving a word to spell, calling another student's name and giving a different word to spell.
3. Student reads the directions aloud, others listen and are called upon to tell what the instructions say to do.
4. Students drill using assembly parts for Step 23 with word cards.

75th DAY

OBJECTIVES:

1. To be able to read, write, and spell the following ten words or terms of Steps 24 and 25 with 75 per cent accuracy. The words and terms are: fuel pump, engine block, rotor shaft distributor, front frame, pulley shaft, front, stud, tab, seated, metal leaf contact. Students on restricted schedule are to learn the following: fuel pump, engine block, rotor shaft distributor, front frame, metal leaf contact.
2. To be able to read the instructions in the Instruction Booklet, look at the drawings of Steps 24 and 25 in the Assembly Manual, then interpret the instructions with 90 per cent accuracy.

TASK ANALYSIS:

1. Students use word cards for word recognition drills.
2. Students drill at the chalkboard the ten words or terms introduced today.
3. After today's ten words are mastered, yesterday's ten words and terms are added to the chalkboard drill. They are: push rod, starter motor, guide ring, valves, disconnect, side, operating, remove, determine, correctly. Students with restricted words are to learn the following parts terms: push rod, starter motor, fuel pump, engine block, rotor

distributor shaft.

4. Students may examine the assembly parts for Steps 24 and 25 of the Assembly Manual, comparing the parts to the diagrams, naming the parts and matching the parts to the word cards.
5. Students look at an assembly part, identify the part and write the name of the part on paper. Student then compares the written name to the word card for spelling accuracy.

76th DAY

OBJECTIVES:

1. To be able to read, write, and spell the twenty words or terms introduced the two previous days with accuracy of 80 per cent in drills. The words and terms are: starter motor, fuel pump, push rod, rotor distributor shaft, engine block, remove, operating, correctly, determine, side, disconnect, valves, guide ring, front frame, pulley shaft, front, stud, tab, metal leaf contact, seated.
2. To be able to locate "seated" and "starter" in the dictionary and write several definitions with understanding as demonstrated by writing a sentence using the words and applying each definition.
3. To be able to have students on restricted schedule to read, write, and spell the underlined terms in Objective 1 with accuracy of 70 per cent in drills.

TASK ANALYSIS:

1. Students perform word recognition drills using word cards.
2. Students drill at the chalkboard, writing and spelling the assigned words.

76th DAY (Continued)

3. Students with restricted words are to learn the underlined terms. They are to manipulate the assembly parts of Steps 23, 24, and 25, identifying them orally; matching the assembly part with word cards of the term, looking at the word cards; then spelling the assembly part orally and writing the assembly part term.

77th DAY

OBJECTIVES:

1. To be able to write and spell the twenty words or parts terms with 80 per cent accuracy on a written pen and paper test. The words and terms are: fuel pump, starter motor, push rod, engine block, rotor distributor shaft, operating, remove, determine, correctly, side, valves, disconnect, front frame, guide ring, front, pulley shaft, tab, stud, seated, metal leaf contact. Students with restricted word numbers are to read, write, and spell the underlined terms.
2. To be able to read the instructions in the Instruction Booklet for Steps 23, 24, and 25 and tell how to apply the instructions, referring to the Assembly Manual, with 90 per cent accuracy.

TASK ANALYSIS:

1. Students participate in a pen and paper test, as the teacher expresses each spelling word and term.
2. Students participate in reading the Instruction Booklet for Steps 23, 24, and 25, then interpreting the directions into their own words.

78th DAY

OBJECTIVES:

1. To be able to apply the instructions to Steps 23, 24, and 25 with 100 per cent accuracy after reading them aloud and observing the Assembly

78th DAY (Continued)

Manual; comparing the parts pictured to the actual parts in the kit.

TASK ANALYSIS:

1. Students with teacher as advisor participate in following the instructions, assembling the parts in Steps 23, 24, and 25.

79th DAY

OBJECTIVES:

1. To be able to read, write, and spell with 75 per cent accuracy, the following ten words introduced today of Step 26: fan belt, distributor shaft, bevel gear, rear engine block wall, generator tension arm bracket, distributor gear, block cover, distributor rotor, adjust, upward. Students on restricted schedule should learn the following: fan belt, distributor shaft, bevel gear, generator tension arm bracket.
2. To be able to identify model parts to terms assigned to the parts with 80 per cent accuracy.

TASK ANALYSIS:

1. Students participate in word recognition drills, using word cards and teacher assistance.
2. Students participate in chalkboard drills, writing and spelling the words and terms introduced today.
3. Students are drilled in assembly parts recognition that are pictured in Step 26.
4. Students are drilled in parts identification of assembly parts previously assembled with teacher pointing to an assembly part of the model and students identifying the part orally. Teacher asks for oral spelling of the assembly parts term for review.

80th DAY

OBJECTIVES:

1. To be able to read, write, and spell with 75 per cent accuracy the following ten words introduced today for Step 27: spark plug, thread, bulb, volts, right cylinder block, four, strip, twist, filament, leads.
2. To be able to read, write, and spell yesterday's ten words or terms with 75 per cent accuracy. The ten words or terms are: fan belt, distributor shaft, bevel gear, generator tension arm bracket, distributor gear, block cover, distributor rotor, adjust, upward, rear engine block wall.
3. To be able to have students with restricted word numbers read, write, and spell: fan belt, spark plug, distributor shaft, bevel gear, generator tension arm bracket with 70 per cent accuracy.

TASK ANALYSIS:

1. Students participate in word recognition drills using word cards. Teacher syllabises words that are difficult. Students and teacher discuss the parts of the engine that apply to today's words.
2. Students participate in chalkboard drill of today's words and after their mastery, review yesterday's words.

81st DAY

OBJECTIVES:

1. To be able to read, write, and spell the following twenty terms and words with 80 per cent accuracy in drills. They are: fan belt, spark plug, distributor shaft, bevel gear, generator tension arm bracket, block cover, distributor rotor, distributor gear, adjust, upward, thread, bulb, volts, right cylinder block, strip, four, twist, leads,

81st DAY (Continued)

filament, rear engine block wall. Students with restricted schedule are to learn the first five parts terms or more, depending upon teacher judgment.

2. To be able to locate in the dictionary "thread" and "leads", write at least two different definitions and write sentences using "thread" and "leads" according to the definitions written with 100 per cent accuracy in comprehending the differences in definitions of the same word.

TASK ANALYSIS:

1. Word recognition using word cards and syllabising the words when necessary.
2. Chalkboard drills for writing and spelling mastery of the words.
3. Dictionaries are used for word definitions and sentence origination drill.
4. Assembly parts are used for identification and writing and spelling the assembly parts terms in drill.

82nd DAY

OBJECTIVES:

1. To be able to participate in a pen and paper written spelling test of the following twenty words: spark plug, bevel gear, fan belt, distributor shaft, generator tension arm bracket, distributor rotor, block cover, distributor gear, upward, adjust thread, volts, bulb, right cylinder block, twist, four, strip, filament, leads, rear engine block wall. Students with restricted word numbers are to write the first five terms.

82nd DAY (Continued)

2. To be able to read the instructions from the Instruction Booklet, look at the Assembly Manual, and interpret what is to be done, with 80 per cent accuracy.
3. To be able to have students on restricted schedule to be tested over the underlined terms in Objective 1 with 70 per cent accuracy.

TASK ANALYSIS:

1. Students write the terms and words as they are expressed by the teacher. The teacher calls each term or word three times.
2. Students read from the Instruction Booklet, look at the Assembly Manual, then tell in their own words what will have to be done in Steps 26 and 27.

83rd DAY

OBJECTIVES:

1. To be able to read the instructions for Steps 26 and 27 in the Instruction Booklet, scan the Assembly Manual, select the parts for assembly, and apply the instructions to complete Steps 26 and 27 with 100 per cent accuracy.

TASK ANALYSIS:

1. Students read the Instruction Booklet, using the Neurological Impress Method if necessary, scan the Assembly Manual for agreement between the manual and booklet. Students identify and select the parts to be used from the kit.
2. Students trim flash, try fitting the parts without using cement, then cementing together when the instructions stipulate.

84th DAY

OBJECTIVES:

1. To be able to read, write, and spell ten words and terms of Step 28 with 75 per cent accuracy. They are: distributor cap, inboard guide rivets, wiring, splice, compression, stroke, wrap, riveted, operation.
2. To be able to find "stroke" in the dictionary, write the definitions and write one sentence using "stroke" as applying to an engine.
3. To be able to have students on restricted schedule read, write, and spell the underlined terms in Objective 1 with 70 per cent accuracy.

TASK ANALYSIS:

1. Students participate in word recognition drill, learning to read the ten words and terms.
2. Students participate in chalkboard drill of today's ten words and terms.
3. Students participate in developing dictionary skills, by finding "stroke" in the dictionary and originating a sentence using the word.
4. Students examine and manipulate assembly parts, identifying the parts by name and writing the names and matching with word cards.

85th DAY

OBJECTIVES:

1. To be able to read, write, and spell in drills ten words or terms with 75 per cent accuracy that are found in Step 29. The words are: thermostat, oil filter, oil filler cap, shaft/wing nut, oil filler pipe, one fourth, turn, housing, water pump assembly, rotate. Students with restricted schedules are to learn the underlined terms.
2. To be able to read, write, and spell yesterday's ten words and terms

85th DAY (Continued)

with 80 per cent accuracy. They are: inboard guide, distributor cap, rivets, splice, wiring, stroke, compressing, riveted, wrap, stroke, operation. Students on restricted schedule are to learn the following: distributor cap, inboard guide, and rivets.

TASK ANALYSIS:

1. Word recognition drills for students, using word cards.
2. Chalkboard drills with students writing and spelling the words and terms as they are expressed by the teacher. Teacher may express the words syllable by syllable as they occur in the drill.
3. Students read the instructions in the Instruction Booklet and interpret what they are to do when they are to apply to the words.
4. Students examine assembly parts, name them, match the word cards to the assembly parts, and write the assembly parts terms.

86th DAY

OBJECTIVES:

1. To be able to read, write, and spell the twenty words and terms with 80 per cent accuracy that are given the two previous days. The words and terms are: thermostat, oil filler cap, shaft/wing nut, distrubutor cap, inboard guide, one-fourth, housing, turn, rotate, water pump assembly, rivets, final assembly, riveted, stroke, wrap, compression, stroke, operation, splice, wiring. The first five terms are for those on the restricted schedule.
2. To be able to identify the parts of the model by name with 80 per cent accuracy.

TASK ANALYSIS:

1. Teacher has students participate in word recognition drill using word

cards.

2. Teacher drills students at the chalkboard over the twenty words.
3. Teacher drills students over previously tested parts words, by students identifying the parts of the nearly completed model.

87th DAY

OBJECTIVES:

1. To be able to write the words and terms on a written test with 80 per cent accuracy.
2. To be able to perform on a parts identification reading test with 80 per cent accuracy.

TASK ANALYSIS:

1. Students participate in a written spelling test as words are pronounced and used in sentences by the teacher.
2. Students inspect model parts attached to numbered index card. Students record the number of each card on the blank beside the name of the part that is attached ot the card.

88th DAY

OBJECTIVES:

1. To be able to read and interpret the instructions in the Instruction Booklet for Steps 28 and 29 with 90 per cent accuracy.
2. To be able to apply the instructions of the Instruction Booklet while looking at the Assembly Manual, to the assembling of model parts with 100 per cent accuracy.

TASK ANALYSIS:

1. Students read the instruction, others hear the instruction, and interpret them into student's own words.

88th DAY (Continued)

2. Students follow the instructions, until the steps of assembly are completed.

89th DAY

OBJECTIVES:

1. To be able to read and interpret the fuel and cooling systems of an engine as pictured and described in the booklet "How an Auto Engine Works"; the interpretation will be with accuracy 90 per cent of the time.
2. To be able to list the parts, according to the system mentioned, with 80 per cent accuracy.

TASK ANALYSIS:

1. Students and teacher select various parts of the booklet for selected students to read and report as to the parts and how the systems operate.
2. Students are drilled over the parts within selected systems.

90th DAY

OBJECTIVES:

1. To be able to read and interpret the lubricating and electrical systems of an engine as pictured and described in "How an Auto Engine Works" which is included in the kit; the interpretation will be with 90 per cent accuracy.
2. To be able to list the parts according to the system with an accuracy of 80 per cent.

TASK ANALYSIS:

1. Students and teacher read and discuss the information of the lubricating and electrical system. Teacher points out the voltage regulator is on a car but not included in our model.

90th DAY (Continued)

2. Students list the parts belonging to each system.
3. Students locate the parts the assembled model has of each system.

91st DAY

OBJECTIVES:

1. To be able to list the parts shown and explain the compression system of a Four Cycle Engine as pictured and described in "How an Auto Engine Works". The listing explanation is with 80 per cent accuracy.
2. To be able to list the parts of the ignition system and explain the system as described in "How an Auto Engine Works". The listing and description will be with 80 per cent accuracy.

TASK ANALYSIS:

1. Students with teacher helping, read the description and identify the parts of the compression system.
2. Students, with teacher help, read and describe how the ignition system operates. Students list the parts in the system.

92nd DAY

OBJECTIVES:

1. To be able to demonstrate the model, identifying parts of the model, and naming the systems of the model with 90 per cent accuracy.

TASK ANALYSIS:

1. Students demonstrate the model to other students, teachers, and administrators. Students tell how the model works, name the systems and parts in the systems.

93rd DAY

OBJECTIVES:

1. To be able to participate in drill using model parts on numbered cards,

identifying and writing the parts words with 75 per cent accuracy.

TASK ANALYSIS:

1. Students are given papers with numbers and blanks. The numbers correspond to the numbered cards having model parts attached.
2. Students identify the part and write the name of the part in the blank by the number that corresponds to the number on the card bearing that particular model part.
3. Teacher grades on spelling and identification of number correct.
4. Teacher gives individualized post reading test which is identical to the pre-reading test with additional words after the pre-reading test words.

COMMON PHONICS RULES WITH PARTS WORDS LISTED UNDER EACH RULE

PHONICS RULE I

Closed syllables end with a consonant, and the vowel is usually short.

Helpful Modeling Hints

assembling, kit, edge, instances, bands, masking, plastic, model, step, helpful

Hidden Nut Installation

hidden, nut, nuts, adjust, pockets, block, left, cap, brush, top, plastic, model, helpful, pocket

STEP I

camshaft, check, trim, fit, slot, slots, tilt, supports

STEP II

crankshaft, connect, connecting, disconnect, rods, six, segment

STEP III

half-bearing, half, halves, cap, cap's

STEP IV

piston, resting, wrist, pin, wedge

PHONIC RULE I (Continued)

STEP V

bottom, bottoms, rib, inset

STEP VI

extend, fasten, snap, lock, locks, press, pressing, pressed

STEP VII

install, notches, rabetted, bevel

STEP VIII

cross

STEP IX

rim

STEP X

bell

STEP XI

pump

STEP XII

nick, brass, contact, bend, twisting, itself, switch, button, buttons, halfway, connected, trapped, trapping, box, attached.

PHONIC RULE I (Continued)

STEP XIII

pinion, red, shaft, shafts, matches, alphabetical, connect, test, disconnect, set

STEP XIV

pan, engine, attach, plug, kip, stick, slot

STEP XV

nut, nuts, top, adjusted, vaseline, mesh, fasten, pivoting, helpful, checking, various

STEP XVI

hookup, stand, install, clockwise, disconnect, add, added

STEP XVII

manifolds, sub-assemblies, left, pin, pins, manifold

STEP XVIII

plastic, spots

STEP XIX

fan, pump, hub, shaft, assemblies, assembling

STEP XX

drop, drops, end, ends, bracket, adjustable, attach

PHONIC RULE I (Continued)

STEP XXI

damper

STEP XXII

spots, valve, stem, six, until, hexagon

STEP XXIII

rod, extra valves, disconnect

STEP XXIV

pump, block, shaft, stud, studs, inch, fan, full, metal, contact

STEP XXV

shaft, hand, tab, fit, fits, flat

STEP XXVI

shaft, button, bevel, block, rod, fan, belts, adjust, bracket, snug, disconnect

STEP XXVII

plug, bulb, bulbs, test, maximum, filament, pull, cut, strip, within, block, twist, back

STEP XXVIII

hookup, cap, back, establish, rivets, flush, until, riveted, wrap,

PHONIC RULE I (Continued)

STEP XXVIII (Continued)

rivet, stripped, switch, buttons, piston

STEP XXIX

block, cap, pump, shaft, nut, them

PHONIC RULE II

Open syllables end in a vowel, usually long.

Helpful Modeling Hints

razor, cement, materials, identify, necessary

Hidden Nut Installation

repair, designed, prevent, rotating, remove, cemented, select, materials, installation

STEP II

remaining, respective, respectively, sizes

STEP III

notice, determine, timing, receive

STEP IV

detail, details, female, locators, repeat, procedure

PHONIC RULE II

STEP V

between

STEP VI

diagonal, designated

STEP VII

risers, retainer, installation, rectangular, diameter

STEP VIII

perimeter

STEP XII

insulated, insulation, repeat, motor

STEP XIII

electric, protruding, motor

STEP XIV

select

STEP XV

notice, provision, manual, operation

PHONIC RULE II (Continued)

STEP XVI

rotate, rotating, opposite, reverse, reconnect, operation

STEP XVII

series, final, repeat

STEP XIX

protrudes

STEP XX

generator

STEP XXI

fuel, vibration, actuator, determine, area, timing

STEP XXII

located, spacer, repeat, procedure, depress, depressing, sizes, remove

STEP XXIII

determine, motor, operation, operating

STEP XXIV

components, fuel, locating

PHONIC RULE II (Continued)

STEP XXV

rotor, distributor

STEP XXVI

distributor, generator, timing, motor, become, retainer, using, rotor, realism

STEP XXVII

realism, being, sequences, remaining

STEP XXVIII

distributor, diagram, determine, desired, wiring, hiding, operation,

STEP XXIX

final, thermostat, rotate

PHONIC RULE III

Syllables with vowel, consonant "e" sequence usually have the vowel long and the "e" silent. The last sound made is the consonant.

Helpful Modeling Hints

blade, knife, tape, size, styrene

Hidden Nut Installation

place, hole, placed, frame, five, case, sides, tape, knife, size

PHONIC RULE III (Continued)

STEP I

securely

STEP III

upside, face, lubricate

STEP IV

side-up, separate, male, female, procedure

STEP VI

slide, engage, five

STEP VII

guide, guides

STEP VIII

base, brace

STEP X

wipe

STEP XII

wire, wires, complete, completely, plate

PHONIC RULE III (Continued)

STEP XIII

shaped, case, aside

STEP XV

holes, note, disengage

STEP XVI

place, placed, inside, operate, rotate, clockwise

STEP XVII

intake

STEP XVIII

these

STEP XIX

shaped, hole, holes, complete

STEP XXII

procedure, tape

STEP XXIII

guide, side

PHONIC RULE III (Continued)

STEP XXIV

frame

STEP XXVI

line, space

STEP XXVII

white, base, exposed, same

STEP XXVIII

note, guide, desired, entire, splice, fire, stroke

STEP XXIX

pipe, intake, rotate

PHONIC RULE IV

When two vowels go walking (are together), the first one usually does the talking (is long); the second vowel is usually silent.

Helpful Modeling Hints

following, tweezers, supplied

Hidden Nut Installation

follow, follows, coat, dried, fifteen, three, main, rear, shown, gears, four, tweezers, supplied, spread

PHONIC RULE IV (Continued)

STEP I

each, three

STEP II

paying, easily, remaining

STEP III

arrow, slowly, gear, paint, easier, receive

STEP IV

detail, details, clear, repeat

STEP V

between, rear, freely

STEP VI

seat

STEP VII

inboard, retainer

STEP VIII

lower

PHONIC RULE IV (Continued)

STEP IX

flywheel

STEP X

away

STEP XI

screen

STEP XII

thumbnail, repeat, halfway

STEP XIII

slowly, thread, gear, gears

STEP XIV

shown, drain

STEP XV

teeth

STEP XVI

leads

PHONIC RULE IV (Continued)

STEP XVII

following, needed, outboard, repeat, lower, inboard

STEP XVIII

cleaner, rear, lower, water

STEP XIX

pulley, pulleys, sleeve

STEP XXI

retain, retainer, gears

STEP XXII

head, heads, shown, sixteen, repeat, continued

STEP XXIV

pulley, seated, bowl, pour, yellow, leaf

STEP XXVI

gear, rear, obtain, leaving, retainer

STEP XXVII

thread, threaded, leads, containing, four, remaining, lead, leading, neatly

PHONIC RULE IV (Continued)

STEP XXVIII

inboard, reaches, outboard

STEP XXIX

cleaner, one-fourth

PHONIC RULE V

"er", "ir", and "ur" usually say "er" as in "her", "bird", and "fur".

Helpful Modeling Hints

properly, determine, starter, rubber, batteries

Hidden Nut Installation

properly, determine, starter, rubber, batteries

STEP I

insert

STEP II

different, certain

STEP III

determine, easier

STEP V

outer

PHONIC RULE V (Continued)

STEP VI

together, manner

STEP VII

risers, retainer, smaller, outer, diameter, observe, lower

STEP VIII

lower, upper, perimeter

STEP IX

converter, outer

STEP XI

pumper

STEP XII

battery, finger, insert, inserting

STEP XIII

starter, order

STEP XIV

turn

PHONIC RULE V (Continued)

STEP XV

converter, cover, operation

STEP XVI

batteries, operate, observe, direction, reverse, power, operation

STEP XVII

lower, upper

STEP XVIII

carburetor, filter, cleaner, lower, several

STEP XIX

water, surface, together, impeller

STEP XX

generator, larger, circumference

STEP XXI

damper, determine, circle, retainer, cover

STEP XXII

cylinder, rocker, circular, another, spacer, larger, different

PHONIC RULE V (Continued)

STEP XXIII

determine, starter, operation, operating

STEP XXIV

damper, enters, water

STEP XXVI

generator, shorter, cover, corner, retainer

STEP XXVII

other, however, cylinder, together

STEP XXVIII

terminals, number, numbered, determine, tower, curve, battery, center, operation

STEP XXIX

filler, cover, thermostat, water, cleaner, turn

PHONIC RULE VI

"ar" usually says the name of the letter "r" as in "art"; "or" usually says or as in "fork".

STEP III

upward, according, mark, marked

PHONIC RULE VI (Continued)

STEP V

partial

STEP VI

short

STEP VII

rectangular, formed, outward

STEP IX

collar

STEP XIII

starter, order

STEP XV

part, parts

STEP XVI

short, parts

STEP XVIII

carburetor

PHONIC RULE VI (Continued)

STEP XX

larger

STEP XXI

arm, short, shortest, formed

STEP XXII

arms, circular, large, rectangular

STEP XXIII

starter

STEP XXIV

corresponding

STEP XXVI

mark, shorter, upward, corner, arm

STEP XXVII

spark

STEP XXVIII

accordance, correctly

PHONIC RULE VI (Continued)

STEP XXIX

carburetor

PHONIC RULE VII

"tion", "xion", and "sion" usually are pronounced "shun"

Hidden Nut Installation

installation, position, instructions

STEP II

connection, attention

STEP III

sections

STEP V

rotation

STEP VII

installation

STEP VIII

extension

STEP X

transmission

PHONIC RULE VII (Continued)

STEP XII

insulation

STEP XV

portion, provision, operation

STEP XVI

rotation, direction, operation

STEP XXI

vibration

STEP XXIII

operation

STEP XXIV

position, vibration

STEP XXVI

positioned, tension

STEP XXVIII

position, operation, compression

PHONIC RULE VIII

"c" followed by "e", "i", or "y", usually makes the same sound that "s" makes. "g" followed by "e", "i", or "y" usually makes the same sound that "j" makes.

Hidden Nut Installation

engine, cement, instances, pencil, necessary, cemented, special

STEP I

cement, cemented

STEP II

certain

STEP III

gently, notice, receive

STEP IV

procedure, wedge

STEP V

ridges

STEP VIII

brace

PHONIC RULE VIII (Continued)

STEP XI

edge, edges

STEP XII

process

STEP XV

notice

STEP XVI

place, placed

STEP XVII

edge, edges, process

STEP XIX

surface

STEP XX

generator, circumference

STEP XXI

distance, circle

PHONIC RULE VIII (Continued)

STEP XXII

notice, spacer, process, procedure, circular, pencil

STEP XXIV

engine

STEP XXVI

generator, engine

STEP XXVII

gentle, gently, sequences, cylinder

STEP XXVIII

accordance, center, splice

PHONIC RULE IX

"y" when a vowel may sound like a long "e", long "i", short "i", or be silent.

Hidden Nut Installation

identify, assembly, styrene, cylinder

STEP I

securely

PHONIC RULE IX (Continued)

STEP II

easily, respectively

STEP III

gently

STEP IV

dry

STEP V

sparingly, freely

STEP VI

squarely

STEP IX

flywheel, properly

STEP X

properly

STEP XII

battery, slightly, eyelets, completely

PHONIC RULE IX (Continued)

STEP XIII

slowly

STEP XV

assembly, apply, carefully

STEP XVI

temporary

STEP XVII

apply

STEP XXI

ability

STEP XXII

cylinder, carefully

STEP XXIII

correctly

STEP XXIV

assembly

PHONIC RULE IX (Continued)

STEP XXVI

assembly

STEP XXVII

apply, gently, cylinder, neatly

STEP XXVIII

battery, correctly

STEP XXIX

assembly

PHONIC RULE X

"igh" is often pronounced "i"; "ue", "ew", and "oo" sometimes make the sound of oo in "moon". "ou" sometimes makes the sound "ou" as in "out". "au" may make the sound "au" as in "saucer".

Hidden Nut Installation

screw, screws, lightly, align, design, designed, tools, round, toothpicks, toothpick, oil, pointed, two, rounded, right, allow

STEP III

down, pointing, tighten, tight, tightly, loosen

STEP V

outer, allow,

PHONIC RULE X (Continued)

STEP VI

downward, lightening, points

STEP VII

outward, outer

STEP IX

housing, outer

STEP X

alignment

STEP XII

slightly, groove, grooves, coil,

STEP XIV

screw, screws, amount

STEP XV

without, housing, unscrew, screwing, align, loosening, slightly

STEP XVI

counter-clockwise, power

STEP XVII

exhaust, around, outboard, right, join

STEP XVIII

housing

STEP XXI

two

STEP XXII

outer

STEP XXVI

mount, right

STEP XXVII

without, taut, however, right

STEP XXVIII

tower, outboard

STEP XXIX

oil, housing

PHONIC RULE XI

"le" at the end of a word often makes the sound "ul" as in "visible"

Hidden Nut Installation

visible, disassemble, reassemble, inaccessible, single, enable, vegetable

STEP III

middle

STEP XII

middle

STEP XV

assembled

STEP XVIII

assemble

STEP XX

adjustable

STEP XXI

circle

STEP XXVII

gentle

NO RULES

Hidden Nut Installation

holding, vaseline, drawings, front, wall,

STEP II

eight, drawing

STEP III

long, binding, color, ink

STEP IV

pair, pairs

STEP XI

trough

STEP XII

small, length, lengths, bared, flange, through

STEP XIII

thread, blue

STEP XIV

find, drawing, where

NO RULES (Continued)

STEP XV

onto

STEP XVI

should

STEP XVIII

air, front, wall

STEP XIX

bearing

STEP XX

ring, small

STEP XXI

special

STEP XXII

squared, off, one, spring, springs

STEP XXIII

push, ring

NO RULES (Continued)

STEP XXIV

front, colored

STEP XXVI

should, wall

STEP XXVII

volts, length

STEP XXVIII

hookup, long, both

STEP XXIX

air, wing

ENGLISH CORRELATED WITH THE VISIBLE V8 ENGINE LESSON PLANS

NOTE: If the student also is participating in the reading and language arts unit of the Visible V8, the teacher must determine if the student needs to repeat the tasks that are referred in some instances in the following lesson plans. Students should have only one period per week to assemble the model which will begin on the 13th day.

1st DAY

OBJECTIVES:

1. To be able to develop word recognition skills and increase vocabulary with 80 per cent success in one class period. Refer to Reading and Language Arts lesson plans for the 1st day.
2. To be able to develop listening skills by interpreting sentence meanings with accuracy 80 per cent of the time.
3. To be able to apply correct punctuation at the end of sentences with accuracy 80 per cent of the time.

TASK ANALYSIS:

1. Refer to Reading and Language Arts Lesson Plans 1st day Task Analysis one through four.
2. Select the instructional booklet entitled "Instructions for the Visible V8 Engine". Teacher reads sentences from "Helpful Modeling Hints" and "Hidden Nut Installation" sections and has students to put the sentences into their own words, explaining the meaning of selected sentences.
3. Teacher explains the use of the three sentence endings.

a. Use a period (.) when stating a fact, giving a mild command, or making a request.

Examples: (1) The nut screws on the bolt. (Statement)

(2) Cement a nut into each pocket. (Command)

(3) Will you please read that paragraph again. (Request)

b. A question mark (?) is used at the end of a direct question.

Examples: (1) Where is the cement?

(2) Would you rather work on Step 1 or Step 2?

c. An exclamation mark (!) shows strong feeling. It is used after one word or a complete sentence.

Examples: (1) Ouch! I pinched my finger with the pliers!

(2) Look at our engine run!

4. Teacher writes the following sentences for chalkboard drill with instructions to put one of the punctuation marks (. ? or !) in each blank. Correct punctuation is in parenthesis.

(1) Did you tighten the screws (?)

(2) All of the nuts are in the pockets (.)

(3) Oh no (!) It broke (!)

(4) Look (.or !)We did finish the engine (.or!)

(5) Wow (!) Look at all those parts moving (!or.)

(6) Do you think we did a good job (?) Well, do you (?)

Each sentence is discussed with the class after entries have been made on the spaces.

5. Teacher assigns one or more of Exercises A, B, and C in the Student Exercise Manual, Part I. Refer to Teacher Exercise Manual.

2nd DAY

OBJECTIVES:

1. To be able to develop word recognition skills and increase vocabulary with accuracy of word recognition 80 per cent of the time. Refer to Reading and Language Arts lesson plans, 1st and 2nd day.
2. To be able to develop listening skills by interpreting sentence meanings from the Instructional Booklet with 80 per cent accuracy.
3. To be able to identify and construct simple sentences with accuracy 70 per cent of the time.

TASK ANALYSIS:

1. Teacher has students drill on letter sounds according to 1st day Task Analysis one through four of Reading and Language Arts lesson plans.
2. Teacher applies 2nd day Reading and Language Arts lesson plans Tasks 1 through 3.
3. Teacher has selected students to read sentences from "Hidden Nut Installation" and "Step 1 Main Frame" in the Instruction Booklet and have listeners to tell what the sentence says to do. When necessary, the Neurological Impress Method is used.
4. Teacher uses "Sentence Building Device" as described in Teacher's Manual.
5. Teacher uses chalkboard drill demonstrating simple sentence construction, then jumbling the word order and losing the sense of the sentence. Example: They went into the store. Into they the went store.
6. Teacher assigns Part II, Exercise A of the Student Exercise Manual and has student record the kind of sentence made (statement, command, request). Refer to Teacher Exercise Manual.

3rd DAY

OBJECTIVES:

1. To be able to develop word recognition skills and increase vocabulary with accuracy of word recognition 80 per cent of the time. Refer to the 3rd day of Reading and Language Arts lesson plans.
2. To be able to develop reading, comprehension, and listening skills by interpreting sentence meanings with 80 per cent accuracy.
3. To be able to construct simple sentences from the "Sentence Building Device" with 80 per cent accuracy.
4. To be able to construct meaningful sentences from jumbled words with 70 per cent accuracy.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans for the 3rd day, Tasks 1, 2, and 4.
2. Teacher reads selected sentences from Step 2 of the Instructional Booklet and asks students what the sentences mean.
3. Students select words from the "Sentence Building Device" and build sentences, writing the part of speech under each word in the sentence. Teacher discusses with the class what each word does in some of the sentences.
4. Students use the Student Exercise Manual and perform the task in Exercise B, Part II. Teacher refers to Teacher Exercise Manual for answers.

4th DAY

OBJECTIVES:

1. To be able to perform on an oral word recognition test of word cards with 80 per cent accuracy.

4th DAY (Continued)

2. To be able to read and interpret the "Hidden Nut Installation" and "Step 1 Main Frame" of the Instruction Booklet with accuracy of 70 per cent in interpretation.
3. To be able to apply ending punctuation to sentences with accuracy of 70 per cent.

TASK ANALYSIS:

1. Students are tested over the word cards introduced during the three previous days. The testing is individualized by selecting one student at a time with the rest of the students facing away from the word cards. Words missed are written by each student's name.
2. Students are reviewed over prior readings in the Instruction Booklet.
3. Students work one or more of Exercises A, B, and C in the Student Exercise Manual, Part III. Teacher Exercise Manual is used by the teacher.

5th DAY

OBJECTIVES:

1. To be able to develop word recognition skills in an expanding vocational vocabulary with accuracy 70 per cent of the time. Refer to 5th day of Reading and Language Arts lesson plans.
2. To be able to read, listen, and interpret sentences with accuracy 80 per cent of the time.
3. To be able to apply commas and sentence endings with 70 per cent accuracy.

TASK ANALYSIS:

1. Students are drilled with word cards as described in Reading and Language Arts lesson plans, 5th day.

5th DAY (Continued)

2. Teacher and students are to read, listen, and interpret sentences in Step 2 of the Instruction Booklet by expressing the meanings of the sentences in their own words.
3. Students work one or more of Exercises A, B, and C in the Student Exercise Manual Part IV. Teacher refers to Teacher Exercise Manual. These exercises separate an explanatory phrase from a complete sentence within the sentence.

   Example: When you come into the room tomorrow, your V8 engine kit will be on the table.

   Find the three camshaft supports, after you have cemented the nuts to the main frame.

6th DAY

OBJECTIVES:

1. To be able to develop word recognition with accuracy 70 per cent of the time.
2. To be able to increase vocabulary with 70 per cent accuracy.
3. To be able to develop punctuation skills with 80 per cent accuracy.

TASK ANALYSIS:

1. Students are drilled with word cards according to lesson plans in Reading and Language Arts, 6th Day.
2. Teacher demonstrates the use of guide words in locating words in the dictionary. Teacher points out that most words have more than one meaning and uses a word in sentences that demonstrate different definitions.

   Example: "Main" is located on the page having "mailman" and "majuscule" as guide words in the Random House College Dictionary, copyright 1972.

6th DAY (Continued)

Point out that "mailman" is the first word on the page, while "majuscule" is the last defined word on the page.

Example sentences:
1. The main force of the army was in trenches behind the forest.
2. The water main froze, and we do not have any water in our house.

3. Students are given one or more exercises in the use of commas after introductory phrases and the use of ending punctuation in Part V, of the Student Exercise Manual. Answers are located in the Teacher Exercise Manual.

7th DAY

OBJECTIVES:

1. To be able to improve word recognition skills and vocabulary with accuracy in drills of 80 per cent.
2. To be able to participate in dictionary skills with 80 per cent accuracy.
3. To be able to participate in a test of commas after introductory phrases and ending punctuation.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans 7th day.
2. Select "main" and "frame" for students to find in the dictionary and originate two sentences for each word, demonstrating two definitions per word.
3. Students are tested over inserting commas after introductory phrases and punctuation endings in sentences of Test Exercise in the Student Exercise Manual Part VI. Answers are in the Teacher Exercise Manual.

8th DAY

OBJECTIVES:

1. To be able to participate in word recognition drills with 80 per cent accuracy.
2. To be able to participate in dictionary exercises with 80 per cent accuracy.
3. To be able to introduce punctuation of compound sentences with student accuracy of 70 per cent.

TASK ANALYSIS:

1. Refer to Reading Language Arts lesson plans, 8th day.
2. Students are to find "case" and "coat" in the dictionary and originate sentences demonstrating two different definitions of each word.
3. Teacher points out how compound sentences are two sentences connected by a conjunction and are to be divided by a comma before the conjunction. Students are then assigned one or more of the three exercises in Part VII of the Student Exercise Manual. Answers are in Teacher Exercise Manual.

9th DAY

OBJECTIVES:

1. To be able to participate in word recognition drills with 80 per cent accuracy.
2. To be able to participate in reading, listening, and visual comprehension with accuracy 80 per cent of the time.
3. To be able to participate in punctuation exercises of compound sentences and words in series.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 9th day.

9th DAY (Continued)

2. Teacher presents advertising of various automobiles, pointing out the quality of materials, pictures, people, scenery, with cards. Teacher and students read passages for interpretation, figurative, and literal language.
3. Teacher explains the use of commas in series. Teacher reviews the use of commas in introductory phrases and compound sentences. Students are assigned Exercises A, B, and C in the Student Exercise Manual, Part VIII. Answers are in Teacher Exercise Manual.

10th DAY

OBJECTIVES:

1. To be able to develop word recognition skills in drill of abbreviations with accuracy 80 per cent of the time.
2. To be able to read, listen, and interpret sentences, paragraphs, and pictures with accuracy 80 per cent of the time.
3. To be able to develop punctuation skills with accuracy 80 per cent of the time.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 10th day.
2. Teacher presents more advertising of new automobiles supplied by dealers or obtained at automobile shows. Teacher guides the students in analyzing paragraphs, arriving at goals, interpreting sentences and pictures. Teacher seeks student interpretations, impressions, of automobile advertising.
3. Teacher assigns selected students role playing to originate advertising for radio, television, and publication. Other students may make sketches that advertise cars.

10th DAY (Continued)

4. Students are assigned Part IX, one or all of Exercises A, B, and C of the Student's Exercise Manual. Part IX involves commas in punctuation of addresses, dates, and salutations in letters.

11th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to read, listen, and interpret sentences in the Instruction Booklet with accuracy of interpretation 80 per cent of the time.
3. To be able to develop punctuation skills with accuracy of 80 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 11th day.
2. Students and teacher read selected sentences in the Instruction Booklet for students to interpret in Step 3. Students may look at the diagram in Step 3 of the Assembly Manual.
3. Students participate in Student Exercise Manual, Part X concerning quotation marks with Exercises A and B. Part XI Exercises A and B are concerned with quotation marks, commas, and ending punctuation and may also be assigned.

12th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with accuracy of 80 per cent in drills.
2. To be able to interpret "Hidden Nut Installation" sentences in the Instruction Booklet with 80 per cent accuracy.
3. To be able to develop punctuation skills with accuracy 70 per cent of

12th DAY (Continued)

the time.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 12th day.
2. Students read and determine the instructions in sentences in "Hidden Nut Installation" by students or teacher reading and asking other students what each sentence says to do.
3. Students participate in Part XII, Exercise A which reviews words in series and sentences requiring quotation marks, commas, and sentence endings. Discussion of sentences after completion of task.

13th DAY

OBJECTIVES AND TASK ANALYSIS:

Note: Refer to Reading and Language Arts lesson plans for the 13th day for students not resourced for Language Arts.

For those resourced for Reading and Language Arts also, the following assignments are given.

OBJECTIVES:

1. To be able to develop applied reading skills with accuracy of 75 per cent.
2. To be able to develop discrimination of literal and figurative language with accuracy of 75 per cent in drills.
3. To be able to develop skill in determining the objectives of pictorial advertising of new cars with 80 per cent success in eliciting student ideas in response to such advertising.

TASK ANALYSIS:

1. Refer to the Reading and Language Arts lesson plans for the 14th day.

13th DAY (Continued)

2. Students participate in the assignment in the Student Exercise Manual, Part XII, Exercise B.
3. Students examine pictures of new cars and discuss their responses to the pictures with the teacher and each other. Students may sketch what ideas they have that differ from the pictures shown.

14th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with accuracy of 80 per cent in drill.
2. To be able to develop applied reading skills with accuracy of 80 per cent in completing assigned tasks.
3. To be able to develop punctuation skills with accuracy 70 per cent of the time.
4. To be able to write a friendly letter with accuracy in punctuation of 80 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 14th day.
2. Students are assigned the location of "support" and "trim" in the dictionary, writing their definitions and using "support" and "trim" in two sentences each that indicate different definitions of each word.
3. Students are assigned Part XII, Exercise C of Student Exercise Manual reviewing quotation marks, commas, and sentence endings.
4. Students role play by writing a friendly letter as a car salesman to a potential customer.

15th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with accuracy of 80 per cent in drill.
2. To be able to develop reading and listening skills with 80 per cent accuracy in comprehension.
3. To be able to develop punctuation skills with accuracy of 70 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 15th day.
2. Teacher selects sentences to read to students and have them determine the meaning of the sentences in the Instruction Booklet, Step 4.
3. Students read and interpret sentences. The Assembly Manual may be observed as an aid.
4. Students are assigned Exercise D, Part XII, reviewing quotation marks, words in series, and sentence endings. Discussion of sentence punctuations is held after assignment completed.

16th DAY

OBJECTIVES:

1. To be able to increase vocabulary and word recognition with accuracy in word card drill of 80 per cent.
2. To be able to demonstrate punctuation skills with test accuracy of 80 per cent.
3. To be able to develop reading and listening skills with 80 per cent accuracy of interpretation.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans.

16th DAY (Continued)

2. Students are tested on Part XIII, Test Exercise of the Student Exercise Manual covering quotation marks, commas, and ending punctuation.
3. Teacher reads and students read with students interpreting what they heard or read on Step 5 of the Instruction Booklet. The Assembly Manual may be used on this task.

17th DAY

OBJECTIVES:

1. To be able to improve word recognition skills and increase vocabulary with 80 per cent accuracy in word card drills.
2. To be able to develop punctuation skills with accuracy in drills on the colon and semicolon of 80 per cent.
3. To be able to develop applied reading skills with accuracy of 75 per cent demonstrated in the assignment.
4. To be able to distinguish the affective domain involvement in advertising of cars.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans 17th Day.
2. Students are shown the uses of the colon in a business letter salutation and before listing or originating a series of items. Teacher also explains and demonstrates the uses of the semicolon.
3. Students participate in Part XIV, Exercises A and B of the Student Exercise Manual.
4. Students locate "insert" and "cement" in the dictionary and write the definitions of each. Students originate two sentences using "insert" demonstrating a different definition of "insert" in each sentence.

17th DAY (Continued)

5. Teacher reads advertising material of different cars and affective appeals are sought by students in the material that is read. The appeals are discussed. The material is found in Part XV, Exercises A, B, and C of the *Student Exercise Manual* and the *Teacher's Exercise Manual*.

18th DAY

OBJECTIVES AND TASK ANALYSIS: Refer to Reading and Language Arts lesson plans for students not resourced for reading language arts.

OBJECTIVES for students resourced for reading and language arts also and participating in this project during the language arts period.

1. To be able to participate in applied reading skills with accuracy of 80 per cent in accomplishing the assignment.
2. To be able to develop punctuation skills with accuracy in drills of 80 per cent.

TASK ANALYSIS:

1. Teacher initiates the study of *Chilton's Auto Repair Manual, 1976* by reading and applying the information contained on the page entitled "How to use this manual".
2. Students are selected to apply portions of the information in the page, "How to use this manual".
3. Teacher explains the use of the apostrophe showing possession or showing a letter is omitted. Students participate by completing one or more of the assignments of Exercise A, B, and C, Part XVI of the *Student Exercise Manual.* Answers are in the *Teacher Exercise Manual*.

19th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with accuracy of 80 per cent in drill.
2. To be able to increase vocabulary with accuracy of 80 per cent in assignment.
3. To be able to develop applied reading skills with 80 per cent accuracy in performance.
4. To be able to discriminate between literal and figurative language applied in automobile literature with accuracy of 80 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 19th day.
2. Students find "assembly" in the dictionary and write its definitions. Students originate two sentences using "assembly" and demonstrating different definitions.
3. Teacher with students examine the "Contents" section of _Chilton's Auto Repair Manual 1976_. Teacher assigns selected students to locate the index of specific cars.
4. Students are asked what is meant by "literal" and "figurative". Teacher explains if necessary. Students compare the language of portions of advertising literature with the language of _Chilton's Auto Repair Manual_ as to literal and figurative language.

20th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to increase vocabulary with 80 per cent accuracy in

comprehension.

3. To be able to develop skills in letter writing with 80 per cent accuracy in punctuation.
4. To be able to develop applied reading skills.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 20th day.
2. Students find "gear" and "cap" in the dictionary, write the definitions, and write sentences for each word in which more than one definition of the word is used.
3. Teacher demonstrates the form used in writing a business letter and assigns students the writing of a business letter ordering connecting rods, crankshaft timing gears, and main bearings.
4. Students are shown how to locate parts of specific cars in Chilton's Auto Repair Manual 1976. Teacher demonstrates the use of the manual by turning to "Contents", looking at automobile company, selecting the name of the car and identifying the code for the index of systems of that particular car or cars. Example: Contents page, car section, Chrysler Corporation, Belvedere C539, Charger C539. C539 is the page of the index for Dodge and Plymouth cars. Headings include systems such as "Engine" with C564 being the page generally describing the different engines used in the Belvedere and Charger cars. Belvedere is a Plymouth and Charger is a Dodge. Also shown for "engine" is U213 which is the Unit Repair Section which is devoted to engine tune-up and troubleshooting. Underneath "Engine" are more parts and systems within the engine with code for the page number. R & R means remove and replace. Cylinder Head R & R has a page code of C568 which

20th DAY (Continued)

provides directions for removing and installing the cylinder head.

5. Students are assigned tasks of locating rod and piston installation for the American Motors Hornet; the Chrysler Corporation Charger, cylinder head R & R, and the General Motors Cadillac cylinder head R & R. Similar assignments can be made for other students.

21st DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drills.
2. To be able to develop vocabulary with accuracy in assignment of 80 per cent.
3. To be able to develop applied reading skills with accuracy of 80 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans for the 21st day.
2. Students are assigned "rod" and "cylinder" to record different definitions of each word. Students originate at least two sentences for each word that demonstrate different meanings for each.
3. Students are assigned the task of finding information on the camshaft for the Apollo and write the first ten steps of R & R for the six cylinder, the V6 and the 260V8. The ten steps may be assigned to various students so that no student need copy the steps for all engines.

22nd DAY

OBJECTIVES:

1. To be able to develop word recognition skills with accuracy in drills of 80 per cent.

22nd DAY (Continued)

2. To be able to develop parts of speech identification skills with accuracy of 90 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts Lesson plans.
2. Teacher explains the tenses of verbs by writing examples of past, present, and future tense. Students participate at chalkboard by underlining the verb or verbs and writing the tense used beneath the verb. Teacher uses Exercise A, Part XVII of the Teacher Exercise Manual and assigns Exercise B, Part XVII of Student Exercise Manual for seat work.
3. Teacher assigns students to find charts under "Engine Rebuilding" that provide information of U. S. and Metric bolts and nuts. Students are to examine the charts and explain them. Teacher gives final explanation or agreement of student explanation.

23rd DAY

NOTE: Students not resourced for the Reading and Language Arts project, participate in assembling the model during the English period; teacher is referred to the Reading and Language Arts lesson plans, for the 23rd day.

Students who are resourced for Reading and Language Arts project will assemble the model during the time period allotted for Reading and Language Arts. For the English period their lesson plan follows:

OBJECTIVES:

1. To be able to develop word recognition skills with accuracy of 80 per cent in drills.
2. To be able to develop parts of speech identification skills with accu-

racy in drills of 80 per cent.

3. To be able to develop applied reading skills with accuracy of 70 per cent in assignment.
4. To be able to interpret sentences with accuracy of 80 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 24th day.
2. Teacher instructs students in the use of pronouns in the subjective and objective cases and the verbs used in the sentences in Exercise AA of the Teacher Exercise Manual, Part XVIII.
3. Teacher assigns Exercise A in the Student Exercise Manual, Part XVIII.
4. Students find "pin" in the dictionary and write definitions. Students write at least three sentences using "pin" having differing definitions. One sentence should use "wrist pin".
5. Students read step 6 of the Instruction Booklet and interpret teacher selected sentences. Students may read the last paragraph of step 6 and interpret the paragraph.

24th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with accuracy of 80 per cent in drills.
2. To be able to develop parts of speech identification skills with accuracy on the assignment of 70 per cent.
3. To be able to interpret sentences with accuracy of 80 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 24th day for review of words.

2. Teacher reviews students over subjective and objective pronouns, singular and plural verbs and their tenses. Use Exercise B, Part XVIII of Student Exercise and Teacher Exercise Manuals.
3. Teacher assigns Exercise C, Part XVIII of Student Exercise Manual.
4. Students are selected to read sentences and listeners interpret the sentences in Step 7 of the Instruction Booklet.

25th DAY

OBJECTIVES:

1. To be able to develop vocabulary skills with accuracy of 80 per cent on the assignment.
2. To be able to develop applied reading skills with accuracy of 80 per cent.
3. To be able to develop parts of speech identification skills with accuracy of 80 per cent.
4. To be able to develop comprehension skills with accuracy in drills of 80 per cent.

TASK ANALYSIS:

1. Students find "align" in the dictionary; write the definitions and originate at least two sentences using different meanings of the word.
2. Students are to locate information on pistons in the Caprice, Dart, and Cherokee; write what information they can find for each and have class discussion on the subject.
3. Students are assigned Exercise D Part XVIII of Student Exercise Manual. It has nouns and pronouns in subjective and objective positions and verbs that are singular, plural, and different tenses. Students write

the identification of nouns, pronouns, and their positions, as well as verbs singular, plural and tense used.

4. Students are to read and interpret Step 8 and Step 9 of the Instruction Booklet.

26th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with accuracy of 80 per cent in drills.
2. To be able to develop sentence construction skills with accuracy of 70 per cent.
3. To be able to interpret sentences with accuracy of 80 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 26th day.
2. Students are instructed in the construction of the prepositional phrase. Students are assigned one or more of Exercises E, F, and G, Part XVIII of the Student Exercise Manual.
3. Students read Step 11, and teacher selects listeners and readers to interpret sentences. Students may refer to the Assembly Manual.

27th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drills.
2. To be able to demonstrate 70 per cent accuracy of parts of speech identification on a test.
3. To be able to develop comprehension skills with accuracy in drills of 80 per cent.

27th DAY (Continued)

TASK ANALYSIS:

1. Select the 20 words assigned on a test in the Reading and Language Arts lesson plans and drill with the word cards.
2. Students are assigned Exercise Test, Part XVIII, in the Student Exercise Manual.
3. Students read Step 12 in the Instruction Booklet; students are to interpret sentences, and teacher guides students in relating a sequence of three or more tasks of assembly. The diagrams may be shown to the students before and after sequencing.

28th DAY

NOTE: Students not resourced in Reading and Language Arts are to participate according to the objectives and tasks for the 28th day of Reading and Language Arts lesson plans.

Students resourced in the Reading and Language Arts project are to assemble the kit at that period, and they are to perform the following tasks.

OBJECTIVES:

1. To be able to comprehend the composition of a paragraph with accuracy 70 per cent of the time.
2. To be able to comprehend meanings of sentences with accuracy of 80 per cent.
3. To be able to develop applied reading skills with accuracy of 80 per cent.

TASK ANALYSIS:

1. Students are shown that a good paragraph has every sentence concerned

28th DAY (Continued)

with the same subject. Teacher writes Step 9 paragraph of the Instruction Booklet and questions students about each sentence being concerned with the same subject.

2. Students read and interpret Step 12 of the Instruction Booklet. Listeners as well as readers are asked to interpret and sequence the meanings in three or more sentences.
3. Individual students are assigned the task of recording the location of an engine serial number from the following automobiles in Chilton's Auto Repair Manual 1976: Gremlin, Chrysler, Granada, Eldorado, Scirocco.

29th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drills.
2. To be able to develop vocabulary and applied reading skills with 80 per cent accuracy of the assignment.
3. To be able to develop paragraph construction skills with accuracy of 70 per cent in drills.
4. To be able to develop comprehension in reading with accuracy of 80 per cent.

TASK ANALYSIS:

1. Students are drilled with word cards from the 29th day assignment of the Reading and Language Arts lesson plans.
2. Students are to locate "single" and "mark" in the dictionary, record definitions of each word, then originate two sentences for each word that have different definitions for the word.

29th DAY (Continued)

3. Teacher illustrates the locating of one sentence in a paragraph (usually the first sentence) that provides the subject matter of the paragraph. Students also record any sentence that should not be in the paragraph, since it does not relate to the subject matter. Teacher assigns Part XIX, Exercises A and B in Student Exercise Manual.
4. Students read and are asked to interpret the meaning of one or more sentences in Step 13 of the Instruction Booklet.

30th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drills.
2. To be able to develop applied reading skills with 80 per cent accuracy in assignment.
3. To be able to identify a well written paragraph from poorly written paragraphs with 100 per cent accuracy.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans for 30th day.
2. Locate "rib" and "ridge" in the dictionary, record the definitions, and use each word in at least two sentences that demonstrate different definitions.
3. Teacher assigns Exercise C, Part XIX of Student Exercise Manual.

31st DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drills.

31st DAY (Continued)

2. To be able to demonstrate comprehension in reading and listening with accuracy of 80 per cent.
3. To be able to use punctuation with paragraphing skills with accuracy in assignment of 80 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 31st day.
2. Students are asked to interpret what was read in Step 14 of the Instruction Booklet. Students may look at diagram for Step 15 in the Assembly Manual.
3. Students are instructed as to making a new paragraph when a different person is quoted with quotation marks used. Students are assigned Part XX, Exercise A and B of Student Exercise Manual.

32nd DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drills.
2. To be able to demonstrate accuracy in reading and listening comprehension of 80 per cent in drill.
3. To be able to apply quotation marks and paragraph indentions with 80 per cent accuracy on assignment.
4. To be able to identify a paragraph that advertises a very small car, with accuracy 80 per cent of the time.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans for 32nd day. Teacher grades students on the number of words correctly identified.

32nd DAY (Continued)

2. Students and teacher read Step 15 of the Instruction Booklet, and teacher selects student to interpret sentences.
3. Teacher instructs students on the requirement of indenting for a paragraph. Students are assigned Exercises C and D, Part XX of the Student Exercise Manual.
4. Students are assigned Exercise AA, Part XXI of the Student Exercise Manual.

33rd DAY

NOTE: Students not resourced for the Reading Language Arts project are referred to 33rd day lesson plans.

Students resourced for the Reading and Language Arts project are to have the following assignments:

OBJECTIVES:

1. To be able to write a paragraph with accuracy in sentence support of the subject matter 80 per cent of the time.
2. To be able to develop listening and reading comprehension skills with 80 per cent accuracy.
3. To be able to develop applied reading skills with 80 per cent accuracy.

TASK ANALYSIS:

1. Students are assigned the task of writing a paragraph advertising a subcompact car.
2. Students read Step 16 of the Instruction Booklet, interpret sentences, and repeat sequential meanings.
3. Students locate the timing assembly of the Toronado, Maverick, Duster, and Hornet. Each student is to locate the timing assembly and record information for at least one of the four cars.

34th DAY

OBJECTIVES:

1. To be able to apply word recognition skills with accuracy of 80 per cent in drill.
2. To be able to apply reading comprehension skills with 80 per cent accuracy in drill.
3. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
4. To be able to originate a dialogue advertising an automobile with group success of 80 per cent appropriate contribution to the dialogue.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans for 34th day.
2. Students read Step 17 of the Instruction Booklet and interpret sentences; students refer to the Assembly Manual for parts identification.
3. Students are to locate and write information of the intake manifold of any one of the following cars: Javelin, Coronet, Thunderbird, or Skylark.
4. Each student is to write a paragraph advertising the Ford Mustang. Students will combine their advertising with each student reading the paragraph he wrote.

35th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drills.
2. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
3. To be able to comprehend information during reading and listening

35th DAY (Continued)

assignments with 80 per cent accuracy.

4. To be able to complete paragraphs by inserting a sentence concerning the subject matter for each paragraph. Use Exercise A, Part XXI of *Student Exercise Manual*.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans for 35th day.
2. Students locate "seat" and "engage" in the dictionary, write differing definitions; and originate two sentences for each word that demonstrates different definitions.
3. Students read Step 18 of *Instruction Booklet*; interpret information, and refer to *Assembly Manual* to identify the assembly parts.
4. Teacher has students examine Exercise B, Part XXI of the *Student Exercise Manual* and discuss what sentence would be used for the general subject matter of the paragraph.
5. Students perform the assigned tasks of Exercise C, Part XXI of the *Student Exercise Manual*.

36th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with accuracy of a reading test of 80 per cent.
2. To be able to comprehend information during listening assignments with 80 per cent accuracy.
3. To be able to write information in appropriate spaces of a billing sheet with 80 per cent accuracy.

TASK ANALYSIS:

1. Refer to work card drill in Reading and Language Arts lesson plans,

36th DAY (Continued)

36th day.

2. Teacher reads the headings of the dealer's billing sheet and indicates the information that should appear beneath the headings. The students refer to the sheet they were given; the teacher originates material for the students to enter in the appropriate columns. Students are given another billing sheet and perform Exercise A, Part XXII, of the Student Exercise Manual.

37th DAY

OBJECTIVES:

1. To be able to perform word recognition skills with accuracy of 80 per cent on the word card test.
2. To be able to read and interpret the abbreviations on the billing sheet with 80 per cent accuracy.
3. To be able to apply information in the appropriate columns of the billing sheet with 80 per cent accuracy.
4. To be able to develop applied reading skills with accuracy of 80 per cent on the assignment.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 37th day.
2. Students are to locate the billing sheet's abbreviations in the dictionary and write the definition given.
3. Students are shown word cards of abbreviations for identification.
4. Students enter information given in Part XXII, Exercise B and C of the Student Exercise Manual on billing sheets.

38th DAY

NOTE: Students who are not resourced for the Reading and Language Arts project, are to participate in the assignment for the 38th day of the Reading and Language Arts project.

Other students participate in the assignments as follows:

OBJECTIVES:

1. To be able to develop reading and listening comprehension skills with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with accuracy of 80 per cent on the assignment.
3. To be able to comprehend the trade techniques with car salesmen and car sales managers with 70 per cent accuracy.

TASK ANALYSIS:

1. Students are to read and listen to Step 19 of the Instruction Booklet, interpreting what is read into their own words.
2. Students are to examine the Owners Manual of a car and explain the maintenance schedule.
3. Teacher refers to Exercise A, Part XXIII of Student Exercise Manual which instructs the reader in procedures of trading for a new car. Student groups originate their own examples of car trading and demonstrate them.

39th DAY

OBJECTIVES:

1. To be able to participate in word recognition skill drill with 80 per cent accuracy.
2. To be able to develop applied reading skills with 80 per cent accuracy

on assignment.

3. To be able to develop visual recognition skills with accuracy of 80 per cent.
4. To be able to develop trading methods in role playing with 70 per cent accuracy in fidelity to roles in relation to previous discussions of trading.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 39th day.
2. Students locate "retainer" and "guide" in the dictionary, write their definitions, and teacher submits sentences that use the words with different definitions to be determined by the students. Students write the sentences, underline the word "retainer" or "guide" and write the correct definition. Refer to Part XXIII, Exercise B in the *Student Exercise Manual.*
3. Students are drilled in engine parts identification by the teacher pointing to different parts of the model assembled and asking students to name the part.
4. Refer to Part XXIII, Exercise C, of the *Student* and *Teacher Exercise Manuals.*

40th DAY

OBJECTIVES:

1. To be able to participate in word recognition drill with 80 per cent accuracy.
2. To be able to develop applied reading skills with 90 per cent accuracy.
3. To be able to develop reading and listening comprehension skills with 80 per cent accuracy.

40th DAY (Continued)

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 40th day.
2. Students locate "housing", "brace", and "collar" in the dictionary; record the definitions and apply the definitions to the underlined word of each sentence found in Part XXIV, Exercise A and B of the Student Exercise Manual.
3. Students interpret sentences in Step 19 of the Instruction Booklet according to the directions of the teacher. The Assembly Manual may be used for identifying the diagrammed parts prior to this assignment.

41st DAY

OBJECTIVES:

1. To be able to develop word recognition skills with accuracy of 80 per cent in drills.
2. To be able to develop visual identification skills with accuracy of 80 per cent in drills.
3. To be able to develop reading comprehension skills with 80 per cent accuracy in drills.
4. To be able to develop applied reading skills with 80 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lessons plans, 41st day.
2. Teacher drills student in identification of model parts by pointing to specific parts and asking and selecting a student to name the parts. Teacher selects students to point to the parts visible on the model and name all of the parts.
3. Students or teacher read Step 20 aloud from the Instruction Booklet

teacher asks selected students to interpret what is read. Teacher selects students to give a series of interpretations involving several sentences.

4. Teacher demonstrates the finding of parts in the J. C. Whitney & Co. Automotive Parts & Accessories, Catalog No. 364B. Teacher assigns students the locating of a Triumph, an English car generator and a 1968 Volkswagen Beetle generator using their respective parts numbers.

42nd DAY

OBJECTIVES:

1. To be able to demonstrate word recognition skills with a test using word cards for the 42nd day of Reading and Language assignment, with 80 per cent accuracy.
2. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
3. To be able to develop punctuation skills with 80 per cent accuracy on assignment.
4. To be able to develop reading comprehension skills with 80 per cent accuracy.

TASK ANALYSIS:

1. Teacher shows the twenty cards for the word recognition test on an individual basis.
2. Students locate the vibration damper for the Pacer, in Chilton's Auto Repair Manual 1976, and write the information given.
3. Teacher reviews students over the writing of business letters and assigns the writing of a letter to the J.C. Whitney Company, ordering

a generator for a 1973 Volkswagen Karman Ghia car. Parts numbers must be included in the letter.

4. Teacher reads parts of Step 21 in the Instruction Booklet for students to interpret.

43rd DAY

NOTE: The following objectives and task analysis are for students who also participate in the Reading and Language Arts project.

For other students, refer to the Reading and Language Arts lesson plans, 43rd day.

OBJECTIVES:

1. To be able to develop skill in concrete parts identification with 80 per cent accuracy.
2. To be able to develop skill in code recognition with 80 per cent accuracy in drill.
3. To be able to develop reading comprehension with accuracy in drill of 80 per cent.

TASK ANALYSIS:

1. Students are drilled by identifying parts of the partially completed model.
2. Teacher from another kit or a completed model, selects individual parts, places them on index cards with tape and have students identify the parts aloud.
3. Teacher passes cards with a different part name printed on each card, to students. Students place the card under each part. Students do not have identical cards to match with the parts. After all students have completed the assignment, each part should have one card placed

43rd DAY (Continued)

below it.

4. Students are assigned the entering on an index card, the parts code and the name of the identified part from the list found in the J. C. Whitney Automotive Parts and Accessories book. Teacher arranges a "Parts Store" using shoe boxes or other boxes with a range of code numbers cemented on the face of each box. Students take turns operating the store and serving as customers. Teacher may arrange a field trip to a parts store previous to this role playing.
5. Students read parts of Step 22 of the Instruction Booklet and interpret what is read. Included are those with which the Neurological Impress Method is used.

44th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
3. To be able to develop code identification skill with 80 per cent accuracy.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 44th day.
2. Students locate "transmission" and "pump" in the dictionary, write the definitions, and use the words in two sentences for each word requiring differing definitions.
3. Students continue role playing in the "Parts Store". Teacher researches the parts book and writes a parts name for a model car that is given

44th DAY (Continued)

in the parts book. This requires the "parts man" to find the parts number in the parts book. A number of parts requests should be arranged in this manner.

45th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
3. To be able to develop identification of concrete parts with 80 per cent accuracy.
4. To be able to develop writing skills in combination with identification skills with accuracy of readability 80 per cent in drill.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 45th day.
2. Students find "screen" and "contact" in the dictionary, write at least two different definitions for each word and explain the differences in writing or orally if necessary.
3. Students are reviewed in identification of parts of the partially completed model. Next, students are shown numbered cards with an inidiviual part on each card. Students are given a sheet to place the correct card number by the name of the part.
4. Students are shown five model parts, and they write the name of each part in the order the parts are shown.

46th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in review.
2. To be able to develop sentence comprehension skill with accuracy of 80 per cent.
3. To be able to develop comprehension of forms to be completed, with 80 per cent accuracy.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 46th day.
2. Students continue reading in Step 22 of the Instruction Booklet and are asked to interpret what was read by others or by themselves.
3. Students read and interpret the dealer's billing sheet; students read and interpret the language of a blank check.
4. Teacher assigns Exercises A and B, Part XXV of the Student Exercise Manual for information to be entered on the billing sheet or checks.

47th DAY

OBJECTIVES:

1. To be able to demonstrate word recognition skills with 80 per cent accuracy on a test.
2. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
3. To be able to develop identification of concrete objects with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Students individually are tested using word cards for the 47th day of the Reading and Language Arts project.

47th DAY (Continued)

2. Students locate the rocker assembly of the Jeepster, Fury, and Ford. Students are to report by writing if possible or orally on tape if necessary about the rocker assemblies.

48th DAY

NOTE: Students not resourced for the Reading and Language Arts project are to carry out the lesson plans for the 48th day of that project. Students resourced for the Reading and Language Arts project are to work according to the following lesson plans:

OBJECTIVES:

1. To be able to develop comprehensive reading skills with accuracy of 80 per cent in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy.
3. To be able to develop concrete object identification skills in drill.

TASK ANALYSIS:

1. Teacher and students read sentences selected from Step 23 of the Instruction Booklet with student interpretation following each reading.
2. Students locate information on the exhaust manifold for the Ambassador, Monaco, Bobcat, and Catalina cars. Students write, print, or orally record a report on the information found about two of the cars named.
3. Teacher places the partially completed model of the engine on a table and a stack of cards, naming the parts of the model, face down on the table. Students are grouped around the table. One at a time, the students perform the following assignment: select a card, read the name printed on the card, point to the location of the part the card names. Student tells what function the part has. Teacher explains if the student doesn't know the answer or gives a mistaken answer.

49th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy in the assignment.
3. To be able to develop the ability to complete forms required in engine repair with accuracy of 70 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 49th day.
2. Students locate "starter" and "pinion" in the dictionary and list the various definitions for each word. Refer to Exercises C and D, Part XXV, *Student Exercise Manual* and complete the exercises.
3. Students locate Exercise A, Part XXVI in the *Student Exercise Manual*; follow the instructions to fill in the necessary information on the car dealer's billing sheet.

50th DAY

OBJECTIVES:

1. To be able to apply word recognition skills in drill with 80 per cent accuracy.
2. To be able to develop applied reading skills with 80 per cent accuracy of assignment.
3. To be able to develop skill in the identification of concrete objects with accuracy in drill, of 80 per cent.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 50th day.

50th DAY (Continued)

2. Students find "coil" and "plate" in the dictionary and list the definitions for each word. Students find Exercises B and C, Part XXVI of the Student Exercise Manual and follow directions.
3. Students are selected to point and name the various parts of the model.
4. Students tell how each part functions in the model.

51st DAY

OBJECTIVES:

1. To be able to apply word recognition skills in review with 80 per cent accuracy.
2. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
3. To be able to develop skills in identifying coded materials with accuracy 80 per cent of the time.

TASK ANALYSIS:

1. Students refer to Reading and Language Arts lesson plans, 51st day.
2. Students refer to Exercise D, Part XXVI, of the Student Exercise Manual. Students are to locate parts in the J. C. Whitney Automotive Parts and Accessories book, record the codes and part names, then write an order for the parts.
3. Students are to obtain cards from the teacher with parts words recorded on them, for the "store manager" to look up and find the correct code with the name of the part.

52nd DAY

OBJECTIVES:

1. To be able to apply word recognition skills on a test of twenty words with 80 per cent accuracy.

52nd DAY (Continued)

2. To be able to develop letter writing skills with 80 per cent accuracy in composition.
3. To be able to develop sentence comprehension skills with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Students are tested individually, using word cards and student oral responses. Refer to Reading and Language Arts lesson plans.
2. Students are assigned Exercise A, Part XXVII, of the Student Exercise Manual in which students order parts by mail.
3. Students read Step 24 of the Instruction Booklet with students interpreting what is read.

53rd DAY

NOTE: Students not resourced for the Reading and Language Arts project are to assemble their model according to the Reading and Language Arts lesson plans, 53rd day.

Students resourced for the Reading and Language Arts project are to participate in the following lesson plans:

OBJECTIVES:

1. To be able to develop concrete identification skills with 80 per cent accuracy in drill.
2. To be able to develop comprehension skills with 80 per cent accuracy in drill.
3. To be able to develop comprehension skills with forms involving the automobile with 70 per cent accuracy.

TASK ANALYSIS:

1. Teacher drills students with partially completed model.

2. Students match word cards to individual unassembled parts of the model that are duplicates of the parts the students have previously assembled.
3. Teacher uses the following forms: car license tax, title, car loan agreement, and purchase agreement with the car dealer; students are required to read and interpret the language of each form. Students should comprehend the arithmetic involved in the purchase price compared to the list price and a trade in allowance difference, due to various legal expenses.

54th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy of assignment.
3. To be able to develop reading comprehension in sentences and paragraphs.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 54th day for ten introduced words.
2. Students find "pan" and "plug" in the dictionary, write the definitions and perform the assignment in Exercise B, Part XXVII, Student Exercise Manual.
3. Students read and interpret Step 25 in the Instruction Booklet. Teacher selects students listening to also interpret what was read.

55th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy in assignment.
3. To be able to develop visual nonverbal interpretation skills with success in interpreting 70 per cent of the time.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans with accuracy in drill 80 per cent, 55th day.
2. Students locate "mesh" and "teeth" in the dictionary and originate two sentences for each word that requires different definitions.
3. Students describe television commercials advertising cars and discuss the appeals found in the commercials other than the car.

   Ex. 1. Pretty girl, car, and cougar animal.

   2. Pretty girl driving and singing, "It's a great little car".
   3. Car, driver, diamond cutter, and diamond.
   4. VW in Japan advertised by a Japanese.
   5. Car on an incline with clouds like the car is flying.
   6. Car on top of a tall pinnacle without a road to get to the top of the pinnacle.

56th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in review.
2. To be able to apply reading and listening comprehension skills with

56th DAY (Continued)

80 per cent accuracy.

3. To be able to develop concrete object identification skills with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to word cards used in the 56th day of Reading and Language Arts lesson plans.
2. Teacher reads from the Owners Manual of Teacher's car and questions students for interpretation of parts read.
3. Students read and interpret from selected sections of the Owners Manual.
4. Students are drilled in identification of parts of the partially completed model, with teacher selecting students to identify as many parts as possible.

57th DAY

OBJECTIVES:

1. To be able to apply word recognition skills on a test with 80 per cent accuracy.
2. To be able to develop applied reading skills with 80 per cent accuracy.
3. To be able to develop reading comprehension skills with 80 per cent accuracy.

TASK ANALYSIS:

1. Teacher tests students using the twenty words in Reading and Language Arts lesson plans, 57th day.
2. Students refer to Owners Manual of teacher's car, "Table of Contents" and locate information about the instrument panel. Students explain what the various controls and instruments provide the operator of

the car.

3. Students read and interpret Step 26 of the Instruction Booklet. Listeners also interpret selected parts of what is read.

58th DAY

NOTE: Students not resourced for the Reading and Language Arts project are to assemble the model at this English period. Teacher refers to 58th day of Reading and Language Arts lesson plans. Students resourced for the Reading and Language Arts project assemble the model at that period only. They perform according to the English lesson plans during the English period as follows:

OBJECTIVES:

1. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
2. To be able to develop reading comprehension skills with 80 per cent accuracy in drill.
3. To be able to develop affective reading observations with 70 per cent accuracy.

TASK ANALYSIS:

1. Students locate information concerning the exhaust manifold of the Rabbit, Century, LTD, GTX, and Wagoneer and write a report on the exhaust manifold of any two cars mentioned.
2. Students read and interpret the maintenance chart located in the Owners Manual or Service Manual.
3. Students distinguish between literal and figurative language in Exercise C, Part XXVII of the Student Exercise Manual.

59th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drills.
2. To be able to develop applied reading skills with 80 per cent accuracy in the assignment.
3. To be able to develop reading comprehension skills with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 59th day.
2. Students locate "carburetor" in the dictionary, write the definition shown, and rewrite the definition into the student's own words.
3. Students locate "manifold" in the dictionary, write the definitions, then originate two sentences using "manifold" with different definitions of the word.
4. Students locate, read, and interpret the safety information in the Owners Manual of an automobile.

60th DAY

OBJECTIVES:

1. To be able to increase vocabulary using word recognition skills with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy of assignment.
3. To be able to develop reading comprehension skills with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 60th day, using word

cards.

2. Students find "exhaust" and "rotate" in the dictionary, write their definitions and complete Exercise A, Part XXVIII of the Student Exercise Manual. Students must identify the definitions applying to the words as they are used in various sentences.
3. Students continue reading and interpreting Step 26 in the Instruction Booklet. Listeners are also selected to interpret.

61st DAY

OBJECTIVES:

1. To be able to apply word recognition skills with 80 per cent accuracy in review drill.
2. To be able to identify concrete objects with 80 per cent accuracy in drill.
3. To be able to recall more than one definition of words with 70 per cent accuracy in drill.
4. To be able to demonstrate accuracy in punctuation of 70 per cent on assignment..

TASK ANALYSIS:

1. Refer to Reading and Language Arts 61st day lesson plans regarding word card drill.
2. Students are drilled on assembly parts of their partially completed model.
3. Teacher drills students over the following words they previously located in the dictionary, asks for word definitions, and uses in sentences: exhaust, rotate, manifold, carburetor, mesh, teeth, pan,

61st DAY (Continued)

plug, coil, plate, starter, pinion, screen, contact, transmission, and pump.

4. Students are given a sample letter to punctuate in Exercise B, Part XXVIII, Student Exercise Manual.

62nd DAY

OBJECTIVES:

1. To be able to apply word recognition skills with 80 per cent accuracy on a test.
2. To be able to develop reading comprehension in sentences and paragraphs with 80 per cent accuracy.
3. To be able to develop applied reading skills with 80 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans for the 62nd day and test students individually with word cards.
2. Students locate, read, and interpret the heating and defrosting system in the Owners Manual of an automobile.
3. Students locate the acceleration, passing speeds, and times in the Owners Manual and interpret into their own words.

63rd DAY

NOTE: Students who do not attend the Reading and Language Arts project, assemble the model according to that projects' 63rd day.

Students who participate in the Reading and Language Arts project assemble the model during the other period, and participate in the following during this English period:

63rd DAY (Continued)

OBJECTIVES:

1. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
2. To be able to develop punctuation and letter writing skills with 70 per cent accuracy on assignment.
3. To be able to identify concrete objects with 80 per cent accuracy.

TASK ANALYSIS:

1. Students locate carburetors for a 1972 Buick Special with 350 engine; 1973 Capri with a 2600cc engine, standard transmission; 1971 Dodge Dart, 318 engine, automatic transmission; and a 1973 Thunderbird with a 429 engine in the J. C. Whitney and Co. Automotive Parts and Accessories, Catalog No. 364B.
2. Students write a business letter ordering the carburetors in Task One, according to stock number with prices listed.
3. Students identify individual parts of the model on index cards and record the names of the parts. All parts are duplicates of the parts that have thus far been assembled.

64th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to increase vocabulary with 80 per cent accuracy on assignment.
3. To be able to identify concrete objects with 80 per cent accuracy in drill.

64th DAY (Continued)

TASK ANALYSIS:

1. Students drill with word cards introduced in the Reading and Language Arts lesson plans, 64th day.
2. Students find "hub", "sleeve", and "impeller" in the dictionary, read the definitions of each, write the definitions in the student's own words, and write a sentence that is an example of each definition.
3. Teacher points to parts of the partially completed model and selects students to name the parts. Teacher also points to where parts are inside housings and asks student to name those hidden model parts.

65th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to increase vocabulary with 80 per cent accuracy of assignment.
3. To be able to develop the ability to synthesize with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 65th day for word card selection and oral drill.
2. Students locate "ring" and "bracket" in the dictionary, read the definitions, and write the definitions in student's own words.
3. Students perform the Tasks assigned in Exercise C, Part XXVIII, Student Exercise Manual; in which students write the definition for "ring" and "bracket" in the student's own words, according to the way either word is used in each of several sentences.

66th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in review drill.
2. To be able to develop punctuation and paragraph skills with 70 per cent accuracy on assignment.
3. To be able to develop reading comprehension skills with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Students are drilled using the twenty word cards that are used in Reading and Language Arts lesson plans, 66th day.
2. Students perform the assignment in Exercise A, Part XXIX, *Student Exercise Manual*, which includes a business letter requiring punctuation and paragraphs requiring rearranging.
3. Students are to read and listen as parts of Step 27 in the *Instruction Booklet* are read. Students are selected by the teacher to interpret what was read.

67th DAY

OBJECTIVES:

1. To be able to apply word recognition skills with 80 per cent accuracy on an individualized test.
2. To be able to develop applied reading skills with 80 per cent accuracy of assignment.
3. To be able to read a brief story and tell about the story with 70 per cent accuracy on story details.

TASK ANALYSIS:

1. Each student is tested by having the teacher at the back of the class

67th DAY (Continued)

with only the selected student facing the teacher. Student is graded on the number of word card correctly recognized. Cards are shuffled after each student is tested.

2. Students find "warranty" in the dictionary. Read each definition and write each definition in student's own words.
3. Students locate "warranty" in the Owners Manual; each student determines the meaning of "warranty" as it is used in the Owners Manual and writes the meaning in the student's own words.
4. Students read Exercise B, Part XXIX, Student Exercise Manual and performs the assignment after reading the story.

68th DAY

NOTE: Students assemble the model according to Reading and Language Arts lesson plans 68th day, if the student is not participating in the Reading and Language Arts project.

Those students who participate in the Reading and Language Arts project are assigned the following:

OBJECTIVES:

1. To be able to develop skill in the identification of concrete objects with 70 per cent accuracy in drills.
2. To be able to review automobile advertising materials to determine the literal and figurative language with 80 per cent accuracy.
3. To be able to develop applied reading skills with 100 per cent accuracy of assignment.

TASK ANALYSIS:

1. Students review the parts of the partially completed model by drawing

68th DAY (Continued)

word cards of parts then pointing to the location of the part on the model and telling what it does on an engine.

2. Students review advertising material acquired from new car dealers as to differences in advertising materials for each car. Example: luxury vs economy cars.
3. Students locate "generator" in the dictionary then write their own definitions for the word.

69th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to develop skills in interviewing as related to automobiles.

TASK ANALYSIS:

1. Students recognize and name ten introduced words selected from Reading and Language Arts lesson plans, 69th day.
2. Teacher must make arrangements to take students on a field trip to a car dealer's establishment for one day in this week or the next. Students are to originate questions to ask the dealer, salesman, or mechanic regarding automobiles. Teacher insures some questions by supplying the following:
    1. What is meant by a "turn key job" when trading or buying a car?
    2. When a dealer examines a customer's car to be traded for a new one, what does the dealer look for, as he examines the car?
    3. If a customer wants to buy a used car, what should the customer look for in order to get a good car?

69th DAY (Continued)

Each student must originate at least two questions that are different from the other students.

70th DAY

OBJECTIVES:

1. To be able to develop vocabulary and word recognition skills with 80 per cent accuracy of word recognition in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy in drill.
3. To be able to interpret sentences, expressions, and abbreviations with 80 per cent accuracy on assignment.

TASK ANALYSIS:

1. Students identify the words on cards used on the 70th day in Reading and Language Arts class.
2. Students locate "depress" and "actuator" in the dictionary. Students read the definitions of the words and write the definitions in the student's own words; student writes example sentences, showing differences of meaning for each word, if more than one definition was given for the word used.
3. Students review advertising and ads in newspapers for advertising terms and discuss. Students complete Exercise C, Part XXIX, *Student Exercise Manual*.
4. Teacher reviews the *Car and Truck Appraisals* book with students.

71st DAY

OBJECTIVES:

1. To be able to apply word recognition skills with 80 per cent accuracy in review drill.

71st DAY (Continued)

2. To be able to develop questioning skills with 100 per cent participation of students.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans 71st day for word card selection and review.
2. Students are taken on a field trip to a new car dealership in which they interview personnel of the business.

72nd DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy on a test.
2. To be able to develop tactile and kinesthetic recognition skills of concrete objects with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 72nd day for words on the test. Teacher individualizes the test in which each student pronounces each word as the word card is shown.
2. Students are told that many times mechanics must find parts of a car engine in places they cannot see. Teacher obtains a large cardboard box and cuts a round hole in the upper part of one side only large enough for a student to put his hand and arm inside the box. Teacher selects parts that duplicate the parts assembled on the partially completed model. Student finds one of the parts, feeling its shape, identifying it by feel; then pulls the part out of the box. Teacher scores the number correctly identified, and notes the parts not identified.

73rd DAY

NOTE: Students participating in the Reading and Language Arts project are to perform the following, while others assemble their model according to the Reading and Language Arts lesson plans, 73rd day.

OBJECTIVES:

1. To be able to develop recall of information with 70 per cent accuracy of recall.
2. To be able to develop writing and punctuation skills with 70 per cent accuracy in punctuation.

TASK ANALYSIS:

1. Students prepare to write or print a script of a play which demonstrates the buying of a new car, recalling the information given the students on the field trip to a new car dealer's place of business.
2. Students review the free advertising materials obtained from various new car dealers and the Car and Truck Appraisals book.
3. Students decide upon the number of people in the family who are buying a new car, the sales people, and sales manager.
4. Students decide upon the car to be traded in, pointing out the defects the salesman and manager note in their appraisal and conversation yet not telling the family of their findings.
5. Students decide upon the conversation of the family from telling the salesman what kind of car they want (two door, four door, or station wagon) to mentioning the good points of the car they want to replace with a new one.

74th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy

in drill.

2. To be able to develop tactile and kinesthetic recognition skills with 80 per cent accuracy in drill.
3. To be able to develop creativity in writing with 70 per cent accuracy of composition.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 74th day for word card selection and drill with student oral responses to words.
2. Students use the box to feel model engine parts and recognize the parts by name without seeing the parts. Students take each part out of the box as they name it.
3. Students continue writing their script with the salesman asking how much the family wants to spend for a new car. Salesman shows the cars that he estimates are within their price range. The family takes rides in some of the new cars. Adults of the family test drive the car. Family makes comments on the car, salesman mentions good points of the car. Students should recall their field trip experiences to develop the dialogue for the family's choice of a new car.
4. Students read Exercise A, Part XXX, Student Exercise Manual, which provides information on the buying and selling of automobiles from the customer's and the salesperson's viewpoint.

75th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy

75th DAY (Continued)

of assignment.

3. To be able to develop object identification skills with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 75th day for selection of word cards to use in drill.
2. Students find "distributor" and "rotor" in the dictionary and write the definitions. Students write sentences in which the words are used with the word definitions applying.
3. Students drill with individual parts, that are identical to parts already assembled, and the word cards of the parts. Students match the word cards with the parts.

76th DAY

OBJECTIVES:

1. To be able to apply word recognition skills with 80 per cent accuracy in review of word cards.
2. To be able to develop sentence comprehension skills with 80 per cent accuracy of interpretation.
3. To be able to develop writing skills with 80 per cent accuracy in composition.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 76th day for word cards and give individualized word pronunciation review.
2. Students read Steps 23, 24, and 25, of the Instruction Booklet with teacher selecting students to interpret what is read.

76th DAY (Continued)

3. Students read Exercise B, Part XXX, of the Student Exercise Manual, which includes a story entitled "The Lost Sale". Without prior discussion, teacher instructs students to write their opinions of why the sale was lost. Students are to rewrite the story beginning after the family has told the salesman what kind of car is wanted. A discussion may follow, alongwith readings of the changed story. No determination is to be made by the teacher or students as to the correct change of story.

77th DAY

OBJECTIVES:

1. To be able to apply word recognition skills with 80 per cent accuracy on a test.
2. To be able to develop object recognition skills with 80 per cent accuracy on drills.
3. To be able to develop writing skills with 80 per cent accuracy in composition.

TASK ANALYSIS:

1. Refer to 77th day Reading and Language Arts lesson plans and select the word cards for the test. Students are tested one at a time with shuffling of the word cards between students.
2. Teacher reviews the parts on the partially completed model by pointing to parts and selecting students to respond.
3. Students develop the conclusion of the new automobile purchase by the "red carpet" treatment given to the new buyers.

78th DAY

NOTE: Students not resourced for the Reading and Language Arts project are to assemble the model according to the Reading and Language Arts lesson plans, 78th day.

Other students are to participate in the following:

OBJECTIVES:

1. To be able to develop reading comprehension skills with 80 per cent accuracy.
2. To be able to develop skill in synthesizing with 70 per cent achievement.
3. To be able to develop tactile and kinesthetic recognition skills with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Students examine the punctuation of their parts of the car buying script in order to improve the clarity and realism.
2. Students group their parts of the script together and read them to determine the proper sequence and dialogue.
3. Students examine by hand model parts, using the box constructed for that purpose; and individual parts identical to parts previously assembled.

79th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy of assignment.
3. To be able to develop reading comprehension skills with 80 per cent

accuracy in drill.

4. To be able to develop oral reading skills with 80 per cent accuracy in coherence.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 79th day, and select the word cards to be used in oral drill.
2. Students locate "shaft" and "tension" in the dictionary, write the definitions and complete Exercise C, Part XXX, of Student Exercise Manual. Exercise C requires student recognition of the definition employed by each word in various sentences.
3. Students read Step 26 of the Instruction Booklet. Teacher selects students to interpret what was read.
4. Students read script parts to develop timing and expression of dialogue.

80th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy in assignment.
3. To be able to develop reading comprehension skills with 80 per cent accuracy of interpretation.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 80th day for word cards of words introduced today.
2. Students locate "belt", "thread" and "block" in the dictionary, write the definitions and originate sentences for three different

80th DAY (Continued)

definitions of each word.

3. Students read and interpret the "Buyers Order Form" as directed by the teacher.

81st DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in review.
2. To be able to develop object identification skills with 80 per cent accuracy in drill.
3. To be able to develop reading comprehension skills with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to 81st day, Reading and Language Arts lesson plans for the twenty word cards. Drill students in word pronunciation individually.
2. Students identify individual parts that are duplicates of the parts on the nearly completed model.
3. Students read and interpret information on the external and internal combustion engines found in How An Auto Engine Works, which is included in the model kit.

82nd DAY

OBJECTIVES:

1. To be able to apply word recognition skills with 80 per cent accuracy on an individualized test.
2. To be able to develop reading comprehension skills with 70 per cent accuracy of interpretation in drill.

82nd DAY (Continued)

3. To be able to develop skills synthesis and analysis with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Teacher selects word cards of words used on a test in the Reading and Language Arts project, 82nd day. Teacher selects individual students to read the words aloud from the word cards. Cards are shuffled between readings.
2. Students read Step 27 of the Instruction Booklet. Teacher asks selected students to interpret what was read.
3. Students examine the diagram of the ignition system and read the description of the system in How An Auto Engine Works. Teacher questions the students to explain how the ignition system operates. Students name the parts according to the passage of electricity from the battery (synthesis).
4. Students are asked to name the parts of the ignition system (analysis).

83rd DAY

NOTE: Students assemble their model if they do not participate in the project during Reading and Language Arts. Teacher instructs students in assembly according to the lesson plans for Reading and Language Arts.

Other students participating in the Reading and Language Arts project have or will participate in model assembly during that period. The following lesson plan applied to them.

OBJECTIVES:

1. To be able to identify concrete objects with 80 per cent accuracy in drill.

83rd DAY (Continued)

2. To be able to develop reading comprehension skills with 80 per cent accuracy of interpretation.
3. To be able to develop skill in synthesis and analysis with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Students are drilled on parts recognition on their nearly completed model.
2. Students are drilled on individual parts placed on index cards with student writing each part name on a numbered sheet that correspond to the numerals of each card.
3. Students read and interpret the information on the lubricating system found in How An Auto Engine Works.
4. Students are asked to name the parts of an engine that the oil lubricates in order, synthesis.
5. Students are asked to name the parts that are oiled from oil in the oil pan, analysis.

84th DAY

OBJECTIVES:

1. To be able to develop word recognition skill with 80 per cent accuracy in drill.
2. To be able to increase vocabulary and develop applied reading skill with 80 per cent accuracy on assignment.
3. To be able to develop fluency in reading a script.

TASK ANALYSIS:

1. Teacher selects word cards according to the Reading and Language Arts lesson plans, 84th day. Students give oral responses to word

cards shown.

2. Students locate "compression" and "stroke" in the dictionary, write the definitions and originate two sentences using each word for a total of four sentences. Each sentence must require a different definition of the "guide" or "stroke".
3. Students practice reading their script so there is a smoothness of dialogue. Sound effects may be implemented as the students desire.

85th DAY

OBJECTIVES:

1. To be able to develop word recognition skill with 80 per cent accuracy in drill.
2. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
3. To be able to develop the ability to synthesize and analyze with 80 per cent accuracy in drill.
4. To be able to develop an understanding of the need for profits in business with 80 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Reading and Language Arts lesson plans, 85th day for word card selection and oral drill.
2. Students locate "filler" and "wing" in the dictionary, write their definitions, and use the words in three sentences each. Each sentence is to demonstrate a different definition for "filler" or "wing".
3. Teacher reviews the cooling system, referring to How An Auto Engine Works. Teacher asks students to name the parts in which the water

85th DAY (Continued)

circulates, beginning with the radiator.

4. Students are referred to the Car and Truck Appraisals book to determine estimated dealer gross profit. Students are asked to enumerate the various items that cost the dealer. Students estimate the net profit.

86th DAY

OBJECTIVES:

1. To be able to develop word recognition skills with 80 per cent accuracy in review.
2. To be able to develop applied reading skills with 80 per cent accuracy of assignment.
3. To be able to develop skill in sequencing with 80 per cent accuracy of assignment.

TASK ANALYSIS:

1. Teacher refers to Reading and Language Arts lesson plans, 86th day and uses the word cards assigned for review.
2. Teacher assigns the task of locating the wholesale price of a 1975 V8 Dodge Dart Custom 4D Sed. LH41 with 17,000 miles, Air Cond., Auto. trans., power steering in the Car and Truck Appraisals book.
3. Teacher describes the action of a four cycle engine; students observe the diagrams and read the description of each cycle.
4. Students describe what occurs and writes the description in their own words.

87th DAY

OBJECTIVES:

1. To be able to apply word recognition skills with 80 per cent accuracy on a test.

87th DAY (Continued)

2. To be able to develop applied reading skills with 80 per cent accuracy on assignment.
3. To be able to develop reading comprehension skill with 80 per cent accuracy of interpretation.

TASK ANALYSIS:

1. Teacher selects the word cards according to the test for Reading and Language Arts, 87th day.
2. Teacher demonstrates the power train by drawing a diagram on the chalkboard as shown in How An Auto Engine Works. Teacher describes how power is transferred from the engine to the wheels.
3. Students read aloud sentences in Steps 28 and 29 of the Instruction Booklet and interpret into their own words as teacher directs.

88th DAY

NOTE: Students, who do not assemble their model during the Reading and Language Arts period, are to assemble their model during the English period.

Other students are to perform the following tasks.

OBJECTIVES:

1. To be able to develop reading comprehension skill with 80 per cent accuracy of interpretation.
2. To be able to develop applied reading skills with 80 per cent accuracy of assignment.

TASK ANALYSIS:

1. Students read selected portions of the electrical system from How An Auto Engine Works. Teacher selects students to interpret what

88th DAY (Continued)

was read.

2. Students are assigned the reading and writing in their own words the thermostat removal and replacement for two of the following: Pacer, Volare, Monterey, and Stingray.

89th DAY

OBJECTIVES:

1. To be able to apply word recognition skills with 80 per cent accuracy on a review.
2. To be able to apply the ability to analyze with 80 per cent accuracy on a review.
3. To be able to apply comprehension of object interactions skill with 70 per cent accuracy on a review.

TASK ANALYSIS:

1. Teacher reviews the class using the completed model and asking questions as to what engine parts are connected to another part which the teacher names. Ex. What parts are connected to a spark plug? Ans. Cylinder head and spark plug wire.
2. Teacher asks students to name the parts in various systems.
3. Teacher asks students to describe the four cycles of a 4 cycle engine. Teacher completes the lesson by describing the actions as simply as possible, then asks selected students to describe the four cycles once more.

90th DAY

OBJECTIVES:

1. To be able to apply word recognition skills with 80 per cent accuracy on a test.

90th DAY (Continued)

2. To be able to apply the ability to analyze with 80 per cent accuracy on a test.
3. To be able to apply letter writing skills with 70 per cent accuracy on a test.

TASK ANALYSIS:

1. Teacher assigns Test Exercises A, B, and C, Part XXXI, Student Exercise Manual.

91st DAY

OBJECTIVES:

1. To be able to apply script reading skills before an audience with 90 per cent accuracy in reading.
2. To be able to demonstrate the engine model with accuracy of presentation 90 per cent.
3. To be able to name individual engine parts with 90 per cent accuracy in the presentation.

TASK ANALYSIS:

1. Students perform their play, "Buying a New Car", before other classes.
2. Students take the model before other classes, and selected students point out the various parts of the model engine.
3. Students hold up individual parts that are attached to index cards and other students name the parts.

92nd DAY

OBJECTIVES:

1. To be able to apply object identification skill with 80 per cent accuracy in drill.

92nd DAY (Continued)

TASK ANALYSIS:

1. Teacher spreads out various parts attached to numbered index cards and students write the number and name of each part in a review drill.

93rd DAY

NOTE: For students who do not participate in the Reading and Language Arts project.

OBJECTIVES:

1. To be able to apply object identification skill with 80 per cent accuracy on a test.

TASK ANALYSIS:

1. Students are given a sheet of paper with numerals corresponding to numerals on index cards bearing individual engine model parts.
2. Cards are spread about the room out of numerical order. These card numerals are different from the numerals used on review.

NOTE: For students who participate in the Reading and Language Arts Project.

OBJECTIVE:

1. To be able to apply newspaper skills with accuracy of 100 per cent on assignment.

TASK ANALYSIS:

1. Students locate five cars for sale in the "want ads" of the newspaper and compare their advertised prices with the prices in the Car and Truck Appraisals book.
2. Students write their reasons why there may be a difference in the prices advertised from those in the Car and Truck Appraisals book.

93rd DAY (Continued)

3. Students record how many prices advertised were above and those below the prices in the book.

STUDENT ENGLISH EXERCISE MANUAL

I. Enter a period, question mark, or exclamation mark in each space.

Exercise A

(1) He counted all of the pockets on the main frame ___

(2) She counted the nuts for the pockets ___

(3) Who cemented the nuts into the pockets ___

(4) Hey ___ Who has the cement ___

(5) Don't use a short screw in that hole ___

(6) Have you cut the flashing off of the front block wall ___

(7) No ___

(8) Ow ___ I cut my finger ___

Exercise B

(1) Where is the rear block wall ___

(2) Have you counted the holes in the rear block wall ___

(3) The front block wall has how many holes ___

(4) Clean the hole of each cemented nut with a toothpick ___

(5) Hold it ___ You're dropping it ___

(6) Joe, please fit the front block wall to the main frame ___

(7) Look ___ You're breaking it ___

(8) Hold this nut with the tweezers ___

Exercise C

(1) Find the left and right cylinder blocks ___

(2) Cement two nuts on the left cylinder block ___

(3) Cement two nuts on the right cylinder block ___

(4) Is any cement in the holes of the nuts ___

Exercise C (Continued) Part I

(5) Can you find a toothpick to clean this nut ___

(6) Trim this cylinder block bottom please ___

(7) Boy ___ That's a neat job ___

(8) Stop ___ That's too much cement ___

II. The words are out of order in the following sentences. Arrange the words to make a sentence and add the kind of sentence you made. (Command, request or statement)

Example: We the the cemented block nuts to. Corrected: We cemented the nuts to the block.

Exercise A

(1) Trim flash the

____ ____ ____

(2) Nut place pocket the into the

____ ____ ____ ____ ____ ____

(3) The tightened he nut

____ ____ ____ ____

(4) Counted pockets she the

____ ____ ____ ____

(5) Pocket coat the with cement

____ ____ ____ ____ ____

(6) Pocket cement in nut the the

____ ____ ____ ____ ____ ____

(7) Holes clean cement from the

____ ____ ____ ____ ____ .

(8) Into nut screw a long screw the

____ ____ ____ ____ ____ ____ ____

Exercise A (Continued) Part II

(9) Support each Camshaft trim the excess plastic from

____ ____ ____ ____ ____ ____ ____ ____

(10) Slot each in put cement

____ ____ ____ ____ ____

Exercise B

(1) The Gear select Timing Crankshaft

____ ____ ____ ____ ____

(2) Hole the add some to vegetable oil

____ ____ ____ ____ ____ ____ ____

(3) Right Block Bottom Main Frame place the Cylinder right side the of the on

____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____

(4) Cement the Front Block Walls Block the to Cylinder

____ ____ ____ ____ ____ ____ ____ ____ ____

(5) Left left Block Main Cylinder Frame the the to the side cement of.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____

(6) Main three Frame the and select the Supports Camshaft

____ ____ ____ ____ ____ ____ ____ ____ ____

(7) Toothpick a with slot put each cement in

____ ____ ____ ____ ____ ____ ____ ____

(8) Plan place each the on part

____ ____ ____ ____ ____ ____

Exercise B (Continued) Part II

(9) Connecting eight select Rods

____ ____ ____ ____

(10) Understand read and instructions the each for assembly step.

____ ____ ____ ____ ____ ____ ____ ____ ____

III. Enter a period, question mark or exclamation mark in each space.

Exercise A

(1) Boy ___ Look at the spark plugs lighting up ___

(2) Disconnect the crankshaft segments ___

(3) Did you trim off excess plastic ___

(4) Are the connecting rods turning on the crankshaft without binding ___

(5) Separate each pair of connecting rods so that the front rod of each pair is at the right hand side of the engine ___

(6) Watch out ___ Piston Half 67 only fits into Piston Half 68 ___

(7) This wrist pin doesn't fit into the hole of this connecting rod ___ What do I do ___

Exercise B

(1) Try a wrist pin in the hole of each connecting rod ___

(2) Wait ___ Don't force the pin ___ Try it in another connecting rod ___

(3) The head of the wrist pin is supposed to wedge into the hole of the piston ___

(4) Are the front connecting rods and pistons on the right side of the main frame ___ Yes, they are ___

Exercise B (Continued) Part III

(5) Stop it ___ Can't you see the cement getting on the crankshaft ___ Oh, now I see it ___

Exercise C

(1) The rear connecting rods and pistons are on the left side of the main frame ___

(2) Are the nuts in place on cylinder wall cap 10 ___ No, one dropped out ___

(3) I can't find it ___ Hey everybody ___ Help me look for it ___

(4) Here it is ___ No it's not ___

(5) Assemble and cement left cylinder wall cap 11 to left cylinder block bottom 7 ___

(6) Oh, I broke it ___

IV. Students separate and underline an explanatory phrase from a sentence of the main idea with the use of a comma. Students are to place ending punctuations.

Exercise A Introductory Phrases and Ending Punctuation

(1) If the crankshaft is hard to turn ___ loosen the screws of the bearing caps ___

(2) When the instructions read "gently" ___ don't tighten ___

(3) Before tightening screws ___ apply cement to the snap locks ___

(4) After selecting the front camshaft timing gear ___ color the timing mark with ink or paint ___

(5) By finding the timing mark on the rear camshaft bevel gear ___

Exercise A (Continued) Part IV

you can color the mark before putting the rear camshaft bevel gear on the camshaft ___

Exercise B Ending Phrases

(1) It's easy to align the timing marks ___ providing they are marked ___

(2) We must carefully fit the ridges of the transmission into the slots of the bell housing ___ cementing them before we fit them ___

(3) Mae found the lower half transmission ___ looking for the upper half ___

(4) They really pressed the upper and lower half transmission parts together ___ wiping away excess cement afterwards ___

(5) I found them at the parts counter ___ searching for a converter housing for the flywheel ___

Exercise C Some phrases are located in various parts of a sentence and require the use of commas.

(1) I want you to meet George ___ who will show you the cars ___ and he can let you drive them ___

(2) We finally found the children___ playing in the back of the car ___

(3) The salesman was being careful ___ itemizing every expense ___ yet being very cordial toward the customers ___

(4) Repairing all kinds of cars ___ giving prompt service ___ and guaranteeing the work has been our way of building a good reputation ___

Exercise C (Continued) Part IV

(5) Clowning around the shop ___ that's all he wants to do ___ it must be stopped ___

V. Students are to copy and identify an introductory phrase by placing a comma in the proper place without a space being underlined and ending the sentence properly without a space underlined. Not every sentence will require a comma.

Exercise A

(1) Since the cement has dried you can put the screw into the nut

(2) Look at the drawing of step seven

(3) Put camshaft 40 through the hole of the front wall

(4) After rotating the crankshaft timing gear so that its timing mark is upward adjust the camshaft timing gear so that its timing mark is downward

(5) Are the timing marks in line with each other

(6) As you press the rear camshaft timing gear on the camshaft please determine if the timing mark faces upward

(7) As you slide the rear camshaft timing gear on the camshaft see if the bevel gear's smaller end is facing toward the rear

Exercise B

(1) After you find the right and left cylinder inboard walls slide them between the front and rear wall blocks

(2) If you have trimmed flash from the upper and lower base braces you are ready to cement the braces where they cross

Exercise B (Continued) Part V

(3) Select converter housing 116 and flywheel 117 and trim all flashing from these parts

(4) When you look at the drawing you can see how the flywheel and the converter housing fit together

(5) Please find the two halves of the oil pump to cement together

(6) After placing the screen housing pipe in lower half oil pumper trough what do you do next

Exercise C

(1) As you measure two lengths of wire your partner should cut the wire

(2) After cutting the wire strip the insulation from the ends

(3) Find the brass battery contact and bend it slightly in the middle

(4) When you insert the bare end of the wire into the hole you are beginning to make a connection

(5) By placing a bared end of the other wire through a hole you are repeating the process

(6) Bend each wire into the slots as shown

VI. Test Exercise of commas located after introductory phrases and sentence ending punctuation.

(1) Help He's being shocked

(2) Why did he play with the electrical outlet

(3) After he rests a while he will be all right

(4) When you finish sliding the brass battery contact in the grooves of the battery you should bend each wire into the

Test Exercise (Continued) Part VI

slots as shown

(5) Find two battery switch buttons 99 and two brass eyelets

(6) After inserting an eyelet about halfway into each switch button the remaining ends of the wire 6" long and the wire 15" long are connected to the eyelets

(7) After the 6" long wire is connected to an eyelet the 15" long wire is connected to the other eyelet

(8) When you find the switch plate you place the button switch with the 6" wire through the upper hole

(9) Place the other button switch through the lower hole

(10) If you are certain the coil button is on the bottom of the switch plate slide the switch plate into the battery box

(11) If you have not removed the excess plastic from the pinion gear do not press the pinion gear on the shaft of the electric motor

(12) Slowly press the pinion gear on the shaft of the electric motor

VII. Compound sentences may be connected by a conjunction preceded by a comma. The conjunctions are: and, but, for, yet, or, nor.

Exercise A: Put a proper conjunction in each blank.

(1) The nuts fit into the pockets of the main frame, _____ you need a screw for every nut.

(2) The model crankshaft is made into segments, ____ a real crankshaft is all one part.

(3) You must read the instructions carefully, ____ you will make

Exercise A (Continued) Part VII

mistakes.

(4) Mistakes by a mechanic make a customer unhappy, ____ the customer tells others about the service.

(5) You may screw the half bearings gently to the frame, ____ you will find a half bearing may be too tight on the crankshaft.

(6) Neither just looking at the diagrams will make the model, ____ reading only the Instruction Booklet will make the model.

(7) Two half pistons 67 will not fit together, ____ a half piston 67 will fit with a half piston 68.

Exercise B: Put a comma in the proper place.

(1) The pistons slide into the cylinders but you must fit the cylinder block carefully on the main frame.

(2) Cement is added to the slots of the cylinder blocks and the front block wall fits into the slots.

(3) The timing mark of the camshaft timing gear is aligned with the timing mark of the crankshaft timing gear or you must adjust the camshaft timing gear to align the marks.

(4) The camshaft bevel gear fits on the camshaft with its smaller end nearer the end of the camshaft for it must mesh with a gear from the distributor.

(5) On a real engine the inboard cylinder block walls are not slid into slots of the front and rear frames nor are they apart from the cylinder blocks.

Exercise C Part VII: Put a comma and a correct conjunction in place to connect the sentences.

(1) The model base is not part of the engine ____ does the battery of a car have buttons on it.

(2) The gears in the starter housing may be hard to assemble ____ I know you can do the job.

(3) The bell housing is cemented to the transmission ____ the retainer is cemented to the bell housing.

(4) The upper and lower parts of the oil pump traps the pipe ____ the pipe is to twist inside the oil pump.

(5) You must attach the long wire to the eyelet of the bottom button ____ the shorter wire will not reach the coil.

VIII. Words or phrases used in series are separated by commas.

Exercise A: Apply commas in correct places

(1) Select ten screws five bearing caps the crankshaft and the main frame to begin assembling step three.

(2) You will need sixteen half pistons eight wrist pins and the eight connecting rods on the crankshaft in order to do step four.

(3) Cementing the right cylinder block bottom to the cylinder block sliding the right side pistons into the cylinders and cementing the cylinder block to the main frame are half of the steps of assembly in step five.

(4) Four screws cement the front block wall the rear block wall and the main frame are needed for step six.

(5) The camshaft parts include the front camshaft timing gear

Exercise A (Continued) Part VIII

the camshaft the rear camshaft bevel gear and the rear camshaft retainer

Exercise B: In some instances clauses are in series.

(1) In Drawing B the pinion gear fits inside the starter case the electric motor fits inside the housing and the housing is screwed to the starter case.

(2) A diagram of the battery shows two brass contacts two buttons four wires one switch plate and the top and bottom of the case.

(3) The three parts mentioned in step 14 are the oil pan oil pan drain plug and oil dipstick support.

(4) Two long screws for the starter three long screws for the bell housing and one short screw for the bell housing are all of the screws shown to be added in step fifteen.

(5) The battery in step sixteen shows four wires one motor button and one coil button.

Exercise C: More series and ending punctuation.

(1) Step seventeen requires trimming fitting taking apart cementing then the fitting again of parts

(2) Two halves of the carburetor two halves of the oil filter and two halves of the air cleaner are shown in step eighteen

(3) You are to add vegetable oil to the impeller shaft slide the impeller shaft inside the front water pump housing and fit the end of the impeller shaft into the hole of the rear half pulley

Exercise C (Continued) Part VIII

(4) The three parts of the fuel pump shown in step 21 are the actuator arm the front half of the full pump and the rear half

(5) You are to cement the generator pulley/fan half to the generator half pulley slide the generator shaft through the front generator case plate and cement the pulley/fan to the end of the shaft

IX. Comma punctuation in friendly letters requires explanation of letter form and phrases in sentences in the body of a letter.

Exercise A: Put commas in the proper places.

(1)

2009 Bradford Street
Partridge Texas 78910
January 17 1978

Dear Fred

How are you? I am doing fine but I missed you at your job in the garage. They told me you had moved and left this address. Write when you can.

With best regards
Mike

Exercise A (Continued) Part IX

(2)

559 Tenth Street
Amber Texas 43210
February 5 1978

Dear Fred

I hope you got my letter and you are too busy working to write soon.

As you can see I have moved to Amber. It's a nice little city and I am glad the company sent me here. The city is located on the Gulf and our company has a lot of engine overhauls and car body repair due to the salt water.

If you do not answer either of my letters I'll know I have the wrong address and will not write again.

Best regards
Mike

Exercise B: Put commas in the proper places.

See next page for exercise.

Exercise B (Continued) Part IX

832 Bridge
Alpine Texas 85760
October 26 1978

Dear Fred

It's true and you must think I like to travel but the firm moved me way out here. It really is a long way from the Gulf. Wow! There's a big difference between Alpine and Amber for there is no water to write about but the mountains are very pretty and we are near the McDonald observatory.

Our company does a lot of business in medium sized cities like Midland and Odessa due to the oil and associated businesses. We are busy enough in Alpine with mountain driving and desert dust in areas around us many car engines need repairs.

When we both have some days off let's try to meet some place and talk things over.

Best regards
Mike

Exercise C Part IX

832 Bridge Street
Alpine Texas 85760
December 15 1978

Dear Fred

Boy! It was great to get your letter. I'm glad you were able to get back to your old job at the garage. Why don't you ask the manager for a few extra days off and come to Alpine?

They are really getting the snow in the mountains and we are getting a lot of work from cars that have frozen their radiators split hoses and broken the seals in their blocks. Neither the cars nor the drivers were prepared to go on these mountains in such heavy snows.

Write when you get a chance whether you can come or not.

Your friend
Mike

X. Quotation marks are used to show that someone is speaking. Place quotation marks after ending punctuation, if the ending punctuation is part of the quotation.

Exercise A: Place quotation marks in the correct places.

(1) He said, I am going to take off the water pump.

(2) She said, I don't believe that is what is wrong with the car.

(3) Is the radiator clogged? she asked.

Exercise A (Continued) Part X

(4) Here is your trouble, he said, the thermostat needs to be replaced.

(5) A salesman asked, How many miles has your car been driven?

Exercise B: Quotation marks are used when words, sentences, and paragraphs are quoted word for word.

(1) The book says to remove the vibration damper on all American Motors cars we must, Remove the radiator core and the fan. Remove the nut from the center of the pulley and, using a puller, remove the pulley from the front of the crankshaft.

(2) The next heading is, Timing Case Cover R & R.

(3) I'll read it just one more time; the book says, Remove the drive belts. Remove the engine fan and hub. Remove the vibration damper pulley and remove the vibration damper.

(4) He read, Assemble the timing chain, crankshaft sprocket, and camshaft sprocket with the timing marks aligned as shown in the illustration.

(5) I am quoting from Chilton's Auto Repair Manual 1976 which reads, This manual is indexed in three ways: The Table of Contents, which follows the title page of the book, lists the beginning of each Car and Unit Repair Section in the manual.

XI. Punctuation, including quotation marks, is reviewed. Quotation marks are used to show a title of a Chapter or another heading within a book.

Exercise A (Continued) Part XI

(1) If you are looking for information on the mainfolds of the Elite its under Exhaust Manifold Removal.

(2) Engines is the title of a fine article in that magazine.

(3) The diagram of the rocker arm is shown above and is entitled Boss 302 Rocker Arm Assembly.

(4) What does the book say It says clean all manifold mating surfaces and place a new gasket on the muffler inlet pipe.

(5) I read under the heading V8 Engine --- Except 428 CJ and 429 Boss.

Exercise B: Quotation marks are used to enclose titles of names of ships and airplanes. Quotation marks are used for titles of radio and television programs. Include all necessary punctuation.

(1) Did you see the commercial on the Chevrolet Show

(2) I liked those big Mark V Continentals on the Ford Show.

(3) This old ship The Grey Goose came in for an overhaul job

(4) The Grey Goose they exclaimed Why that ship was supposed to have been scrapped ten years ago

(5) They really made a good engine for The Spirit of St Louis

XII. Reviewing punctuation, discriminating literal and figurative language.

Exercise A: Reviewing words in series, commas, quotation marks, and sentence endings.

(1) In his tool box were pliers screwdrivers open end wrenches boxed end wrenches and socket wrenches

(2) The Assembly Manual says Install gears A B and C in alphabetical order (letter side up) as shown

Exercise A (Continued) Part XII

(3) Later on it says Press the pinion gear onto the shaft protruding from the starter housing

(4) In the Instruction Booklet under Battery it says Find insulated wire cut two 6" and two 15" lengths of wire and strip 1/2" insulation off the ends of each wire

(5) Under Step 13 Starter of the Instruction Booklet it says Select and trim Gear A (45) Gear B (46) and Gear C (47) and install them in alphabetical order with the letter side up.

Exercise B: Figurative language is often a comparing of something factual with something else that is not related to the fact expressed.

Literal language is factual, without exaggeration or the use of the imagination.

Students are to write "figurative" or "literal" in the blank following the sentence. A figurative part of the sentence is to be underlined.

(1) This 1977 Pinto has 4 cylinders. _____

(2) The engine runs as smooth as a bee gathering honey. _____

(3) The Granada's wheel base is 110 inches. _____

(4) The Thunderbird is a Ford. _____

(5) When you drive a Thunderbird, you'll feel like you are riding on a cloud. _____

(6) A Mercedes-Benz owner is known as one who believes in having the finer things in life. _____

Exercise B (Continued) Part XII

(7) The salesman said, "You buy one of those little cars, and you'll bobble up and down like a cork on the water." _____

(8) The wholesale price for the 1975 Ford Gran Torino is $2,250.00, and the retail price is $3,000.00. _____

(9) Cement rear block wall to the cylinder block at the slots, and it will look like a space machine from Mars. _____

(10) Press a brass eyelet halfway into a switch button, connect the end of a wire, and push the eyelet all the way into the switch button. _____

Exercise C: A review of commas, sentence endings, and quotation marks.

(1) When Mike was working on the ignition system in their garage Marie was removing the cartridge from the air cleaner

(2) They checked the water in the battery the oil level the transmission oil level the coolant in the radiator and filled the car with gas

(3) The service station attendent said I think you are a quart low on oil

(4) It really does cost a lot to have a valve job done on a car he said

(5) Why me I moaned Why am I the one who is always stuck with the big car repair bills

(6) The mechanic grinned You need to follow your car maintenance schedule

Exercise D Part XII

(1) After picking up the tools nuts bolts washers and cleaning the grease off the floor the mechanic's helper knew a lot of work was needed besides car work

(2) My first big job on a car was to remove and replace a water pump he said It really was hard to do within the short time they gave me to do it

(3) The man was in a Ford pulling a Buick with a lady steering it

(4) You must come to see feel and enjoy the cushioned luxury of these new seats in our new model Cadillacs the salesman said over the phone

(5) We have Cadillacs pickups Oldsmobiles and Chevrolets the quartet sang to the tune of their commercial

XIII. Test Exercise: Put the necessary commas, ending punctuation, and quotation marks in the proper places.

(1) The mechanic said Help me lift this cylinder head from the block

(2) Look at that There's a silver dollar in the oil pan I said

(3) He pulled on the chain of the pulley to lift the engine from the housing

(4) I slid a wooden block under the engine and the mechanic gradually eased the engine on the block

(5) We replaced a water hose a water pump connecting rods and a vibration damper this morning the mechanic said

(6) If I unscrew these screws will the cylinder come off I asked

(7) Try it and see he replied

Test Exercise (Continued) Part XIII

(8) We must be sure to use the right kind and grade of motor oil for each car or we may cause a lot of trouble he said

(9) There was an interview an application to fill and references to get for this job I told them

(10) I needed the main frame crankshaft segments 55A 56B 57C 58D 59E 60F 61G 62H eight connecting rods eight wrist pins and sixteen piston halves to get every thing ready for the cylinder blocks.

XIV. The colon may be used to begin a quotation, to begin a series of words, phrases, or statements. A colon follows a saluatation in a business letter. The semi colon may take the place of a comma followed by a conjunction, or takes the place of a period and connects two sentences.

Exercise A: Students are to place the colon and semi colon in the proper place.

(1) The order of firing by the spark plugs is as follows 1, 8, 4, 3, 6, 5, 7, 2.

(2) The process of cleaning the oil pan is as follows remove the plug, drain the oil, unscrew the bolts holding the pan, and clean the pan of all refuse.

(3) The student recited, "The movement of gasoline in a car is as follows The gasoline goes from the gas tank to the fuel pump it pumps the gas to the carburetor the gas is mixed with air from the air cleaner the vapor goes through the intake manifold. When the intake valves open, the gas vapor goes

Exercise A (Continued) Part XIV

into the cylinders the piston compresses the gas the spark plug has an electric spark at that time, and the gas explodes. All that is left is the smoke that goes out of the exhaust manifold."

(4) The mechanic told the helper to do these things before leaving put all tools in their places put dirty rags away throw broken parts stripped bolts and nails into the bucket scrape the floor sweep the floor clean the counter put away the lamp and turn out the lights.

(5) He told me all those things I wanted him to write them down for me.

Exercise B: Students are to punctuate the following business letter. Part XIV.

1608 Market Street
Elbridge Texas 70170
January 19 1978

Mr. John A Conklin
Parts Manager
Service Parts Co
P O Box 5002
Harner Texas 89899

Dear Sir

Please send to the Car World Company at the above address the following

Crankshaft Kits 1976 Buick Special V8 430 eng 19-5978AE 1972 Cadillac 472 eng 99-6160 YFE 1976 Chevrolet 250 eng 19-598671E

Bill us after you have sent this order

Yours truly
Kim Randor

XV. Students are to recognize that advertising is directed at originating, stimulating or developing feelings that create a desire to buy the product advertised.

Exercise A. The following advertising is to be classified as either "economic" or "luxurious". Student is to select "economic" or "luxurious" as the term describing each statement.

Exercise A (Continued) Part XV

(1) When you drive your new Mark V, others will know you believe in having the best. _____

(2) After driving this thrifty car, you'll smile each time you pass the gas pump. _____

(3) You will be amazed at the beautiful colors of this car's interior. Only the finest materials are used. The styling shows exquisite taste. _____

(4) Attend the finest parties; your car will be admired by the finest people. People who know what elegance really is. _____

(5) You can't get more for your money when you buy our car, and it will save you money day by day in every way. _____

Exercise B: The following advertising attempts to bring about snob appeal or criticism of large cars. Students enter "snob" or "put down" in the appropriate blanks.

(1) There has never been another car like this. Only the finest materials are used; price is no object when we build. _____

(2) Why drive a gas guzzler when you can drive our high performance low consuming car? _____

(3) Extra weight means extra waste. _____

(4) With the finest engineering and styling by experts, you need the comfort and roominess of this new car. _____

(5) When you buy from us, you have chosen to become a fellow customer alongwith the most outstanding people in the whole world. It's truly a car for nobility. _____

Exercise C: The following advertising appeals to those who like sports, or those who like small cars for reasons other than

Exercise C (Continued) Part XV

economy. Students are to enter "sport" or "small car" in the appropriate blanks.

(1) You ought to try out this beauty. It has mag wheels, overhead cams and has done 0 to 50 in 7 seconds. _____

(2) Havoc Limited has done it again. Their Lombard Special has a bold restyling that has adapted ideas from other cars and includes some fine ideas of their own. One such idea is the change from four speeds to five, which enables the Lombard Special cruise at 60 mph with only 2410 rpm. _____

(3) Compare our O/H with the others: the Pinto, Vega, Chevette, Fiesta, or the Nova. The Nova is nearly 32 inches longer, 7 inches wider but has less room inside than our O/H. Try the O/H; you'll like it. We know you will. _____

(4) "You've got to think big, if you want to succeed," is a saying of long ago that is as modern as today, and this Tiger Shark is every bit of it. It is planned to top the exotic luxury car standards as well as to be the world's fastest production line model. _____

(5) Here is GFX Appeal with a 212 SX engine that will light your fire. It took Flaxton designers to engineer and equip such a car for the demanding and discriminating driver. _____

XVI. The uses of the Apostrophe

Exercise A: The apostrophe showing possession. Students add the apostrophe.

(1) This is Alans car.

Exercise A (Continued) Part XVI

(2) Mikes car is next to Janes.

(3) The next three cars are Helens, Lois, and Bobs.

(4) The cars radio is not playing.

(5) A mechanics job is plenty busy at times.

Exercise B: The apostrophe saves a letter or letters. Students add the apostrophe.

(1) Wont you come over for dinner?

(2) Ill have to think about it; Ill let you know if I cant make it.

(3) Youll finish my car by tomorrow afternoon, wont you?

(4) Whenll you be through with this valve job? Youve got plenty waitin on you.

(5) "Evning, Mrs. Jones, thisll be ready in bout fifteen minutes," Larry said.

Exercise C: Apply the apostrophe to show ownership or to omit letters. Write "possession" or "place taking" in the blanks.

(1) I cant say that Ive seen an engine like this. _____

(2) Id like to see the inside of that engine. _____

(3) This engines valves are burnt. _____

(4) Hows this for a sweet running engine? _____

(5) The kids car cost each of them $300.00 to own it; they are all partners, and each kids name is on the title. _____

XVII. Tenses of Verbs

Exercise A: The following sentences are used for examples by the teacher. They show past, present, or future verb tense. Write

Exercise A (Continued) Part XVII.

the proper tense in each blank.

(1) I got a camshaft at the parts counter thirty minutes ago. _____

(2) Our mechanic will have the job done in about two hours. _____

(3) Without a car, I walked into town. _____

(4) "I shall walk in this line as long as anyone," the old man declared. _____

(5) I drove the car all of the day without any trouble. _____

Exercise B: Write the proper tenses of the verbs in the sentences. Underline the verbs.

(1) I tighten the bolts to 20 pounds pressure every time. _______

(2) I tightened this one too tight. _____

(3) I have tightened all of the bolts. _____

(4) I will tighten these, then I'll go to lunch. _____

(5) He did a good job on this engine. _____

(6) He will do a good job every time. _____

(7) He has done fine work today. _____

(8) They will become fine mechanics someday. _____

(9) They are good mechanics now. _____

(10) They have been the best mechanics in our city for many years. _____

XVIII. Pronouns in subject and object positions; verbs and their tenses.

Exercise AA: Pronouns in subject positions. Students put past, present, or future in the blank for the tense of the verb or verbs. Underline the pronoun that is the subject.

(1) I pulled the light toward the engine. _____

Exercise AA (Continued) Part XVIII

(2) We jumped the spark to the block with a screwdriver across the spark plug wire. _____

(3) They worked until 6 o'clock. _____

(4) She works as long as anybody. _____

(5) We will replace the valves. _____

(6) We grind and replace valves in all makes of cars. _____

Exercise A: Pronouns in objective and possessive positions. Students underline the pronouns in each position and write "Objective" or "Possessive" in blanks.

(1) Because of their bad checks, Crains does not do business with them. _____

(2) Our car ran right by them. _____

(3) His car and her car look alike. _____

(4) The engine purred like a kitten to his ears. _____

(5) The truck pulled us out of the ditch. _____

Exercise B: Students underline the subjective pronouns, encircle the objective pronouns, put two underlines beneath each verb and write the verb tenses in the blanks.

(1) We drove the car slowly. _____

(2) You will drive several hours before you arrive. _____, _____

(3) They thought the truck was great. _____, _____.

(4) Because of them, we worked into the night. _____

(5) We were running them, until they wore out. _____, _____.

Exercise C: Students underline the subjective pronouns, encircle the objective pronouns, put two lines under the verb or verbs

Exercise C (Continued) Part XVIII

and write the verb tenses in the blanks.

(1) We cemented each nut into the pockets. _____

(2) There are fifteen of them to cement into the pockets of the main frame. _____

(3) We screw each of them to the main frame. _____

(4) They will wedge a wrist pin into the holes of each piston. _____

(5) After they colored the timing marks, they aligned the marks; I was pleased with them. _____, _____, _____.

(6) You thought I could do the job; because of you, I became a successful mechanic. _____, _____, _____.

(7) The screen clogs up with oil and water. Is the water coming from a cracked cylinder head? I will find out soon. ____, _____, _____.

Exercise D: Students are to make a chart and enter the nouns and verbs under various headings.

Example: They rode to town in the truck.

SENTENCE	SUBJECT	VERB			OBJECT	NOUNS		PRONOUNS	
		PAST	PRES.	FUT		SING.	PLUR.	SING.	PLUR.
Ex.	they	rode			town truck	town truck		they	

(1 You work on the camshaft, and I will grind the valves.

(2) He wiped the grease off of the bearing and set it on the table.

(3) He washes each part in gasoline and looks at them very carefully.

Exercise D (Continued) Part XVIII

(4) He will work ten hours a day on cars, if you will let him.

(5) She helps him; when she reads the instructions, he understands.

Exercise E: The prepositional phrase, composed of prepositions, nouns as objects, and with or without adjectives that modify the noun. Example: in the house. Prepositions may include "of", "in", "to", "about", "above", "across", "after", "at", "around", "before", "between", "by", "into", "for", "from", "on", "over", "since", "under", "up", "with".

Students are to underline the prepositional phrase of each sentence.

(1) The student added cement to the pistons.

(2) The student turned the camshaft timing gear, until it was at the mark.

(3) The student pressed the upper base brace slowly on the lower base brace.

(4) The holes of the flywheel were cleaned.

(5) The oil pump's pipe is trapped by the housing.

Exercise F: There may be more than one prepositional phrase in a sentence. Underline each prepositional phrase once and underline the preposition again.

(1) Of all of the steps of assembly, step six may be the hardest.

(2) When you are marking the crankshaft and camshaft timing marks, there are two more of the gears left to mark.

(3) Turn the flywheel to the right, now turn the converter housing to the left, and press the flywheel on the converter housing.

Exercise F (Continued) Part XVIII

(4) Trim the flash from the halves of the transmission, and I will put some of the cement on the toothpick.

(5) Fit the transmission into the slots of the bell housing.

Exercise G: Locate the adjective or adjectives within the prepositional phrase and underline each.

(1) Find the retainer for the transmission, put some cement on one of the sides of the retainer, then press the retainer against the bell housing and around the protrusion of the transmission.

(2) After you have stripped one half of an inch of the insulation from the ends of each wire, connect the six inch length of wire to the brass battery contact.

(3) Place one end of the plain battery contact into the end of the battery box with the pocket at the bottom of the box.

(4) After you have found the oil dipstick support, look for the grooves on the block and slide the oil dipstick support into these grooves.

(5) The flywheel assembly slides on the rear end of the crankshaft.

XIX. Writing paragraphs requires a sentence that provides the subject with all of the other sentences relating to that subject matter.

Example: When you open the kit of your model V8 Engine, the kit may look like it is carelessly made. The parts may appear to be all jumbled up in their bags. However, the assembly manual will show you how orderly the kit really is.

The subject matter of the paragraph is the appearance of the model kit.

Exercise A: Underline the subject matter sentence.

You must be careful when you install the gears inside the starter gears case. The gears must have all trim and flash cut off. Each gear's teeth must be examined so the gears mesh properly. You must install the gears in alphabetical order with the letter side up.

Exercise B: Underline the subject matter within the subject matter sentence.

The power train of a car is the supplying of power that originates in the engine and is transferred, through different car parts, to the wheels. Gas vapor explodes in a sequence within the different cylinders. These explosions force the pistons away from the head of the cylinders. The pistons are connected to the crankshaft and cause the crankshaft to rotate. This rotating, or turning causes the flywheel to turn inside the transmission. When the transmission shift lever moves a gear, it is placing a gear that provides the turning of the propellor shaft. The propellor shaft is connected to a gear inside the differential, and the differential turns the axle which turns the wheel or wheels.

Exercise C: Of the following three paragraphs, check the well written one in the blank.

___ (1) When they started to assemble their first model, they did some things all wrong. They started pulling parts.

Exercise C (Continued) Part XIX

from their numerals; they did not read their instructions or look at the diagrams, and they were very careless with their cement.

___ (2) They are so careful to do things properly after such a bad start. They read the instructions and interpret them correctly before they start to assemble the model. They look at the diagrams and take only the parts from the kit for that step of assembly. One of them has an old car they are taking apart and that helps.

___ (3) They are having a good time as they see their model come together. They really look forward to taking apart the old car too. When the model runs and they see the parts moving, I know they will understand a lot about the engine. They plan to sell the parts they get from the old car.

XX. Make a new paragraph whenever a different person is quoted as speaking.

Exercise A: When a new paragraph is needed, underline the first sentence of the new paragraph.

The teacher was reading about the differential consisting of gears designed to permit the wheels to turn at different speeds when a corner is turned. One student interrupted, "Teacher, how can they do that? I don't see how the gears would know when a corner was being turned."

Exercise B: Students are to rewrite the following and put the

Exercise B (Continued) Part XX

sentences into the proper paragraphs and quotation marks where needed.

The fuel pump is operated by an eccentric cam at the front end of the camshaft, I said. The class wanted to know what they meant by an eccentric cam. One of them said Oh! I know ! An eccentric cam is one of those lumps on the camshaft. You are right I said but all of those lumps have a function.

Exercise C: In writings of stories, friendly and sometimes business letters, paragraphs are indented.

Example: Robert got a new Ford Mustang and is really proud of it. He has had a good time getting extra equipment for it.

Mary has been busy getting her horse ready for the barrel race in the rodeo at Ft. Worth. She and that horse look like one when she rides around those barrels.

Assignment: Locate the paragraphs and indent.

The carburetor is the part of the fuel system where air is mixed with gasoline, making a vapor. Air comes through the air cleaner, into a tube where it mixes with the gas that goes through a fuel jet to the tube. Oil is pumped from the oil pan, through a filter, and between various engine parts to reduce friction and heat. Oil also prevents power losses from friction, and it washes away dirt and particles of metal.

Exercise D: Locate the paragraphs, and indent.

A car's generator changes mechanical energy from the crankshaft

Exercise D (Continued) Part XX

pulley to the generator pulley, into electrical energy needed for ignition, lights, radio, heater, air conditioner, and other electrical needs. The battery changes chemical energy into electrical energy. It is used to start the engine plus the other electrical units when the generator doesn't supply enough current. The starter is an electric motor designed to crank the engine in order to start the engine. When the starter is operating, its pinion gear is thrust forward and engages the teeth of the flywheel.

XXI. To be able to identify a different paragraph when it is located inside another.

Exercise AA: Correct this paragraph by making two paragraphs of it when you copy it. Be sure to indent.

The distributor rotor is driven by the camshaft. The distributor sends a high tension current to cylinder's spark plug at the same time its piston reaches the top of the compression stroke. The coil is a transformer that steps up the six or twelve volts of the battery to about 20,000 volts. The distributor cap receives the current and passes it to the rotor. As the rotor rotates inside the distributor housing, it distributes current to each terminal, according to the firing order.

Exercise A: Add one sentence to each paragraph. Each sentence added must deal with the subject matter.

Select eight piston halves 68 and eight piston halves 67, trim the flash from the piston halves, and cement each piston half 67 to a piston half 68. ____.

Exercise A (Continued) Part XXI

The car of tomorrow is here today. The 1978 Cilace is more than a machine built in tradition. It is advanced proof of beauty combining the best engineering features of our time with pure driving enjoyment. ______________________________.

Exercise B: Students read the paragraph below and write the subject matter sentence on the lines below.

The joy of driving is the feel of freedom. To hear the wind sliding over the windshield, to feel the power of a smooth, powerful engine --- such things as these are the joy of driving free. When curves are taken at straightaway speed, I feel my car's resistance to the forces that would hurl it from the road. This is pure joy of freedom. The freedom to go, to feel one's power, to resist opposing forces, to do as one wills --- this is freedom's driving joy.

____

____

Exercise C: Select the subject matter sentence from the paragraph and write it on the lines below the paragraph.

Chrysler spent ten or more years looking at untold numbers of alternatives to make a subcompact. They considered entering the subcompact market from the late 1960's through the early 1970's, skipping the era of the Vega-Pinto-Gremlin. Now, Chrysler becomes the first American Company to offer a front-drive, all-independent suspension, with delightful space within. Of over two dozen small cars now on sale in this country, none offers the American

Exercise C (Continued) Part XXI

driver more things he looks for in a car than the Dodge-Plymouth O/H.

XXII. To provide material to add to teacher explanation of the billing sheet.

Exercise A: Place the following information on a billing sheet for car repairs.

Mr. Joe Doakes, 413 O Acorn Avenue, Bolsteed, Texas 89880, resident telephone 800-001-90100, 1973 Ford Torino V8, TEX 007, engine no. 3402031, serial no. LA 23S146273, odometer 36,035 miles; change oil, 6 qts., filter, adjust valves, rotate tires, oil @ $1.10 qt., filter cartridge $5.65; valves adjusted $15.00, tires rotated $10.00

Exercise B: Place the following information on a car billing sheet.

Mr. Jason Carter, 3100 Bolick Street, Somewhere, Texas 44001, business ph. 800-100-67432, 6 cylinder 1972 Chevrolet panel truck, Rite Soon Cleaners, 101 Bush Street, Somewhere, 44509, 46,321 miles TEX 155, phone when ready; remove and replace all valves; exhaust 55-1426 P @ $3.60; intake 55-1436R @ $3.30; labor $48.00, adjust valves $12.00; R & R air cleaner cartridge $5.78

Exercise C: Place the following information on the billing sheet.

Mrs. Grace Gomez, 2318 Rogers St., Somewhere, Texas 44003, res. ph. 100-75032, 1973 Cadillac, 52001 miles TEX 538, Tune-up.

Exercise C (Continued) Part XXII

R & R sparkplugs, distributor points and condenser, adj. carburetor ck. timing, ck. fuel pump, ck. compression and valves, sparkplugs set of 8 - $11.98; dist. kit 55-21707 @ $3.38; labor $18.00

XXIII. To increase knowledge in the area of trading cars. To develop the ability to find information useful to individuals. The teacher should have advertising information with pictures of various models of cars produced by one car company. The teacher should also make available and explain portions of the Car and Truck Appraisals book.

Exercise A: Students are to read the following outline and write a script for skit, simulating a radio program.

I. Customers - The Brown Family
  A. Mr. Brown - wants more power yet good gas mileage.
  B. Mrs. Brown - doesn't want to shift, wants a nice interior.
  C. James Brown - 15 years old, likes a lot of equipment and sports models.
  D. Marie Brown - 10 years old, likes a big car, green color preferred.

II. Trade in car, a 1973 Ford Torino, 6 cylinder 2 door, with 60,238 miles. A clean car in spite of miles.

III. Salesman is Joe Barnes with five years of experience in the Fine Ford Cars dealership.
  A. Joe asks them to pick out a car they would like to take for a drive.
  B. Joe thinks a 1978 Fairmont 4 door V8 would be the kind

Exercise A (Continued) Part XXIII

of car they might like, as it is an intermediate in size with good performance and a very respectable gasoline mileage rating.

IV. Trading begins after the Browns find the car they would like to buy.

A. The Browns had looked at the sticker price on the new car which was $5,153.00.

B. The Browns had looked in the newspaper and knew the advertised price of a 1973 Torino was $2,200.00

C. The Brown's are shocked to learn they're car as a trade in should be allowed the wholesale price of $1,100.00.

D. Joe Barnes has seen this shock many times, and he assures them that is all their car is worth; but at great hardship on his commission and the dealership, he will allow them $1,300.00. This is an obvious bid for Mr. Brown to make some offer to buy.

(Students are to continue building this dialogue then refer to Exercise C.)

Exercise B: Copy each sentence, underline "retainer" or "guide" and write the definition of "retainer" or "guide" as the word is used in the sentence.

(1) Fit the retainer on the collar of the transmission to secure the bell housing.

____

(2) I went to the lawyer for legal work, and he asked for a

Exercise B (Continued) Part XXIII

retainer of $500.00

____.

(3) We hired a guide who took us to a lot of interesting places in the European city.

____.

(4) Insert the distributor wire through the right inside guide, then connect the wire to the forward spark plug.

____

(5) The pilot showed how expert he was; he could guide this ship to any port of the harbor.

____

Exercise C: Students continue writing their script by examining and using the following outline material.

The Brown family's buying a car. (Continued)

IV. Trading continued

E. Mr. Brown talks privately with his family, especially his wife, who really likes the new car.

F. Mr. Brown makes an offer which Mr. Barnes insists that the manager would never accept. Mr. Barnes waits for Mr. Brown to make another offer. The children want the car also.

G. Mr. Brown makes a better offer.

H. Joe, being quite friendly, says something like, "Look, I know you like the car and would really enjoy it. I'd like to have you for a regular customer. If you can raise your price just a few hundred, I'll take it to the manager and try to get him to approve.

I. Mr. Brown raises his offer once more.

J. Joe takes the bid to the manager.

K. The manager keeps Joe for fifteen minutes.

L. Joe tells Mr. and Mrs. Brown that the manager appreciates the offer, but they can't quite take the offer.

M. Joe says that he thinks the manager will take the bid if Mr. Brown will offer just a few dollars more. Joe says, "Mr. and Mrs. Brown, I can't guarantee it, but I believe you are just a little bit short of buying your car."

N. Mr. & Mrs. Brown have an earnest conference and decide to make one more bid.

O. Joe hurries with excitement to the manager. He returns and said the manager wants to know if he would increase his offer $50.00 more.

P. Students complete Mr. Brown's bid and acceptance by the salesman and manager.

Q. Mr. Brown and family are seated in Mr. Barnes' office when Mr. Barnes introduces the Assistant Manager, Mr. Rogers. Mr. Rogers has the closing agreement which includes title, taxes, license fees, "car make ready" expenses. Mr. Brown finds about one hundred more dollars are added to his bid. With a new man involved -- an assistant manager, Mr. Brown goes along with the increase in his bid. It is explained

Exercise C (Continued) Part XXIII

to the Browns how these are expenses not included as part of the trade. The Browns had not asked for a "turn key job."

R. After the trade has been made, the Browns are introduced to the Maintenance Manager who explained various features of the car and offers to help them in their car service needs. Joe, the good salesman writes them a voucher that provides them with five gallons of gasoline free.

XXIV. Identifying word definitions according to the use of the word in sentences.

Exercise A: Copy the sentences and below each sentence write the definition of the underlined word.

(1) We are moving to another apartment, because we don't like to pay this much for housing.

____

(2) When you have finished cleaning that saddle, don't forget the housing.

____

(3) He tightened the brace about the bit and bored a hole into the wood.

____

(4) The dentist cleaned, adjusted each brace and put them on the patient.

____

(5) The commercial was about "ring around the collar".

____

Exercise A (Continued) Part XXIV

(6) The collar of the flywheel must be outside of the converter housing.

Exercise B: Copy the sentences, find and write the definition of each underlined word in the sentences.

(1) The farmer removed the collar from each of the mules after they returned from the field.

____

(2) The student built the stand by using a brace to support the weight of his model.

____

(3) The gears of the starter are protected by the housing.

____

(4) The policeman said he would collar that thief, and he did.

____

(5) The sailor ran to the brace, and soon the sail was trimmed.

____

(6) The real estate man told us about a new housing development

____

XXV. A study of the language on the billing sheet and bank checks. Teacher refers to Teacher Exercise Manual.

Exercise A: Students are given the abbreviations Qty, no., cust., a.m., p.m., Oper. no., X times, adj., diff., trans., cart., acct., &, gals., qts., lbs., @, OK'd, to find in the dictionary. Bus., Res., auto.,

Students learn air cond., sublet, internal summary, accessories, Exercise A (Continued) Part XXV

flush cool. system and write their meaning according to the billing sheet.

Exercise B: Students determine the significance of the check number; location of the date, who "pay to the order of" or "payee" is; how to write the numerals and words of the amount of the check, the significance of the line following "memo" or "for". Students are to learn where to sign a check. Students are to determine the significance of the coded numerals at the bottom of the check.

Students copy this check form and fill in the following information. Date, Fine Ford Company, $3,548.10, total payment of 1978 Fairmont, M. T. Brown (or student signature).

Students make other copies, or teacher supplies old blank checks. Students decide on information to fill in practice checks.

Exercise C: Student applies the proper definition to the underlined word, after copying the sentence.

(1) The farmer bought check starter for the baby checks.

____

(2) The starter raised the gun and fired; the 100 meter dash began.

____

(3) The pinion of one wing was clipped.

____

(4) He was proud of his antique pinion quill.

____

Exercise D: Copy each sentence and write the correct definition of the underlined word below the sentence.

Exercise D (Continued) Part XXV

(1) Turning the key in the ignition activates the starter.

____

(2) The pinion gear meshes with the flywheel.

____

(3) The officers attempt to pinion the arms of the husky criminal.

____

(4) The pinion nuts were tasty eating.

____

(5) The starter was left out of the bread mix.

____

XXVI. With a copy of a billing sheet fill in the material for Exercise A. Exercises B and C are exercises in word definitions. Exercise D required applied reading and recording skills.

Exercise A: Students fill out a billing sheet with the following information after locating the parts, stk. numbers, prices, other information in J. C. Whitney & Co., Automotive Parts and Accessories. John A. Jenkins, Custom Insurance Co., 3451 Elkins, Somewhere, Texas 98900, ph. 999-2018, 1972 Chevrolet Impala 402 V8 82L43259, TEX 756, 68,243; change oil 6 qts. @ $1.10; filter $5.92; piston rings 4 1/8 bore, connecting rod bearings std., distributor ignition tune-up kit.

Exercise B: Copy each sentence and below the sentence, write the definition of the underlined word as it is used in that particular sentence.

(1) The cowboy pulled his rope into a coil.

Exercise B (Continued) Part XXVI.

(2) The snake was in a coil when I saw it.

____

(3) You can see how the pipe of the air conditioner is in a coil for a great length in a small space.

____

(4) The coil did not supply enough electricity for the engine.

____

Exercise C: Give the correct definition of each underlined word.

(1) His mother told him to clean his plate.

____

(2) There is a lot of plate glass in this car.

____

(3) The pilot was protected by armour plate.

____

(4) Slide the buttons through the holes of the switch plate.

____

Exercise D: Students locate parts in the J. C. Whitney Automotive Parts and Accessories book and write a letter to a parts house ordering the following amounts:

5 Air Cleaners 14" diameter regular 3 1/8" high for 4 bbl. carb. w/single stud mount.

3 Air Cleaners 14" diameter for single carb. mani. only; for 2 bbl. carb. w/2-5/8" neck stud mount.

Exercise D (Continued) Part XXVI

1 Volt. regulator, heavy duty, Rambler 71-76

3 Heavy Duty Alternators 72-76 Chrysler

2 Heavy Duty Alternators 65-75 Ford Galaxie

5 ea. Battery Cables Std. Guage, 12 volt, post-type, 13½", 19", 27", and 58".

XXVII. Ordering parts by mail; vocabulary improvement; language identification.

Exercise A: Students make an order from the J. C. Whitney & Co. Automobile Parts and Accessories. Students must include parts names code numbers, amounts and prices.

1 Camshaft, Amer. Motors 8 cyl. 66-75, 390.

1 Camshaft, Buick Special 8 cyl. 68-75, 350.

1 Camshaft, Ford Falcon 6 cyl. 60-75.

6 Intake valves, Kaiser Frazer, 46-55.

6 Exhaust valves, Kaiser Frazer, 46-55.

3 Engine Gasket sets, Chrysler V8, 58-77, 318 engine.

Exercise B: Write the definition in your own words of the underlined word in each sentence.

(1) How did you pan for gold?

(2) She baked a batch of cookies in the pan.

(3) He wanted to pan the camera.

Exercise B (Continued) Part XXVII

(4) The oil pan needed cleaning

____

(5) The critic intended to pan the show.

____

(6) He screwed the plug into the pan.

____

(7) The old plug has pulled his last cart.

____

(8) He was chewing his plug with brown saliva dripping from his mouth.

____

(9) His plug looked like it caught a lot of fish.

____

(10) He set the gap of each plug and screwed them into the block.

____

Exercise C: Students copy the underlined passages identify and write either "literal" or "figurative" after each passage.

(1) He jumped into the car and roared away like he was shot from a cannon. (2) The 318 V8 is known as a top engine produced by Chrysler, though not as powerful as other larger engines. (3) He had recently increased the compression by grinding the cylinder heads and enlarging the bore, it is a different 318 now. (4) He added a special exhaust system, and the engine roared like a lion. (5) As he raced on the dirt track, dust swirled into currents and rose into the air.

XXVIII. Recognition of different definitions of a word; letter punctuation.

Exercise A: Write the correct definition of the underlined word beneath each sentence.

(1) He did not mean to exhaust his funds, trying to fix-up his car.

____

(2) Smoke rose from the exhaust pipes of the factory.

____

(3) What does the exhaust manifold do?

____

(4) The order was to rotate three hundred men in the overseas program.

____

(5) The farmer would rotate his cotton, maize, and sudan each year.

____

(6) How does gasoline cause a crankshaft to rotate?

____

Exercise B: Punctuate the following business letter. (Part XXVIII)

1281 Linen St

Somner Texas 83210

January 31 1978

Jack L Patton Mgr

Gold Auto Parts Co

2348 Mikel St

El Baco Texas 91201

Dear Sir

Please bill us later for this order as follows:

V8 318 Chrysler 75

2 sets intake and exhaust manifold gaskets 7 X 2312

4 sets exhaust valves 2L5235 2 rocker arms 1T4823

6 cyl Chevrolet 73 1 set valves intake 1C2401 1 set distributor kit 2L8901

Yours truly

T O Clode

Exercise C: Write the definition of the underlined word in each sentence.

(1) The minister told them they could repeat after him, "With this ring". ______________________________

(2) The telephone had a soft ring. ____________________

(3) He used a bracket in the sentence. ________________

(4) A strong bracket supports the book shelf. ____________

Exercise C (Continued) Part XXVIII

(5) He wanted to ring the pistons to increase power and prevent oil losses. ______________________________

(6) His shots formed a bracket on the target. ______________

XXIX. Correcting a business letter; students describe story action and tells what could have happened to change the action of the story; students interpret example ad.

Exercise A: Correct the many mistakes in this business letter.

2819 58 St;
Templare. Tex; 72305
January 30 1978

Parish T Treet. Mgr;
Accord Parts Co;
Masters Texas, 53218

Dear Sir,

In October of last year we ordered carburetor and valve kits from your company We would like to have you trace that order and send the parts immediately

We know we mailed this order to your company: we have a copy of the order on file?

Yours sincerely.

P S Past; Parts Mgr;

Exercise B: Read the following and change the story into a happy one.

Exercise B (Continued) Part XXIX

Billy was a young man learning to be a mechanic at Hope Garage. He was helping Old Mac who would have to retire soon. Old Mac envied Billy his opportunity. Old Mac had to learn everything for himself.

Billy was a hard worker. He had a girl, and everything seemed to be going his way.

Jack Barton was the foreman, and he was pleased with the arrangement. Old Mac was the best mechanic in the shop. He was sure Billy would be as good, with Old Mac teaching Billy all he knew.

Old Mac remembered all the dirty jobs he had when he was young; he saw to it that Billy had his share.

Billy didn't like that black oil and grease on his hands and clothes. He didn't complain though.

Billy's girl really didn't like the grease and dirt under his fingernails and into the wrinkles of his hands. He had to scrub plenty before going out on a date.

There was a time when an overhaul job had to be gotten out, and Old Mac and Billy worked hard on it. The car was an old Cadillac, the pride and joy of Mr. and Mrs. Franklin. They were *the* Franklins. He was Chairman of the Board of the local bank.

The Franklins were going out of state on a long-planned trip. They wanted to show their car to friends, who were especially interested in older cars.

Old Mac took off the usual time at the end of the day, tell-

Exercise B (Continued) Part XXIX

ing Billy to finish the job and deliver the car to the Franklins. Finishing the job meant putting the cylinder heads on the block, adding the carburetor, air cleaner, connecting wires, and tuning the car. Enough work to make him late for his date.

Billy called his girl and told her he would be an hour late. But Billy had a job that would take two hours at least. He hurried as fast as he could. After an hour and a half, he drove the car to the Franklins, called his girl from his house, and hurriedly got ready for his date.

His girl complained, because he smelled of grease, and his fingernails were dirty.

The Franklins got almost out of state when their car overheated, and the engine was ruined. Billy had not tightened the nuts on the cylinder heads. Water got into the oil, which stopped the flow of the oil.

Hope Garage was mortgaged to the local bank, and Mr. Franklin decided the bank should not renew the mortgage. Hope Garage was closed and all of its people were out of work.

Exercise C: Write the following abbreviations into words and define each descriptive term in your own words.

For Sale 1976 Ply. Volare Wgn. AM-FM, tape, split seat pwr & air low mi, cruise, pwr windows, dr. lks - blue, cream puff - Come see ????

XXX. Developing awareness in car trading

Exercise A: Read, and write what you would do if you were shopping

Exercise A (Continued) Part XXX

for a car. Write what you would do if you were a salesman for a dealership.

The Customer

(1) Mr. Brown took his family to buy a car.

(2) Mr. Brown had two things in mind about buying a car -- economical on fuel and a powerful engine.

(3) Mrs. Brown wanted an automatic transmission and comfort.

(4) The son wanted sporty looks and extra equipment.

(5) The daughter liked a certain color and wanted a big, impressive car.

(6) All of the family wanted four doors.

(7) The Browns expected their car to bring the retail price on a trade, instead of a wholesale price.

(8) Mr. Brown raised the amount of money they would pay in addition to their car in the trading.

(9) Mr. Brown was shocked but went along when he had to pay for the title transfer and other legal expenses.

The Salesman

(1) Mr. Joe Barnes believes in a friendly approach.

(2) He needed to know the Brown's desires in order to steer them to the "right" car for them.

(3) He might have been able to get them to buy a more expensive model, he thought afterwards.

(4) However, it was a sale, and they should enjoy the car. If they do, he might enlist their help in bringing in more

Exercise A (Continued) Part XXX

customers.

(5) The policy of the dealership to require the manager's approval on the final sale worked in this instance.

(6) The assistant manager's presence to add on the extra charges may have been necessary.

(7) He hopes they return to the dealership for the car's maintenance.

(8) He makes a note to himself to call them after a month and ask about the car's performance. He may offer $25.00 or $50.00 to them, if they send a customer in which he makes another sale.

Exercise B: Read the following sales operation entitled The Lost Sale. Consider the statements and actions made by the prospective customers and the salesman. Write your opinion of why the sale was not made. Rewrite the story so that the sale was made.

The Lost Sale

Luke Cramer is a new salesman with Compass Motors. He completed the company training schedule and is ending his first week as a salesman.

Mr. and Mrs. Denson and 17 year old son Jack have come to the car lot in search of a car for Jack. Mr. and Mrs. Denson are thinking of a school car that is dependable and economical to drive, while Jack desires a sport model with plenty of speed and power.

Exercise B (Continued) Part XXX

Luke introduces himself to the Cramer family, who tell the salesman of their desires. Luke, being a young man also, readily identifies with Jack's desire for a sport model and shows the family the tachometer, odometer, and other dials, the AM-FM Radio with tape deck, and electric clock. Luke shows Jack how the seats are adjusted. He tells Jack how quickly this Trans Am model can go from zero to fifty. Luke raised the hood and showed with pride the large, powerful engine.

Mr. Denson starts to tell Luke his desires for a dependable, economical car, but Luke interrupts by showing Jack the sun roof of the Trans Am. Mr. and Mrs. Denson slowly walk to their car, telling Jack they have other shopping to do.

Luke tells the family how he can make them a very good deal. They told him they might come by later. Luke makes a note to call them and send them advertising on the Trans Am.

Exercise C: Write the definition of the underlined word in each sentence.

(1) A shaft of light came pouring through the window. _____

(2) The shaft of the hammer was broken. _____

(3) The propellor shaft is part of the power train. _____

(4) The shaft of the spear was into the target. _____

(5) The tension was mounting before the game. _____

(6) Measure the tension on that fan belt. _____

Exercise C (Continued) Part XXX

(7) The tension increased as he wound the propellor of the rubber powered model airplane. ______________________

(8) One could feel the tension as the angry pair glared at each other. ______________________

XXXI. Student Tests

Exercise A: Individualized Test of Reading the following:

nuts cap hidden cement main frame block wall front rear camshaft supports crankshaft segment connecting rods half bearing end timing gear piston halves wrist pin cylinder wall screws inboard outboard bevel retainer flywheel housing converter upper lower transmission bell collar oil screen pump pipe wire insulated brass contact battery switch buttons eyelets box plate toothpick coil pinion electric motor case cover pan drain plug dip stick teeth exhaust intake manifold carburetor filter air cleaner fan hub thermostat pulley water vegetable shaft generator bracket brace base fuel vibration damper arm actuator bearing rocker push rod valve heads seat guide ring leaf rotor distributor sleeve spark bulb rivet filler wing nut

Exercise B: Test on Engine Systems

(1) Write the following parts of the ignition system from the parts listed as follows: battery, generator, starter, coil, ground, regulator, spark plugs, distributor, ignition switch.

(2) Name the parts of the fuel system from the parts listed below:

thermostat, carburetor, air cleaner, fuel pump, oil filter,

Exercise B (Continued) Part XXXI

fuel tank, camshaft, intake manifold, exhaust manifold.

(3) Name the parts of the lubricating system from the parts listed below:

Rocker Arm Shafts, rocker arms, push rods, oil pan crankshaft, connecting rods, cylinder walls, oil filter, oil pump, camshaft, floating oil intake, main bearings, camshaft bearings, impeller, thermostat, generator, distributor.

Exercise C: Test Letter Writing

Write a business letter to the J. C. Whitney & Co. ordering four complete overhaul gaskets sets 37-6059X @ $9.49 each for Ford Model "A"; 3 camshaft kits for Chrysler and Dodge V8's 318 and 360 no. 37-7043P $107.95; 5 Resistor Spark Plug Cable Sets 55-1268W 8 cylinder @ $6.49 for 74 Olds Cutlass.

You are a Parts Manager for Bolton Automotive,
502 North 1st, Marple, Texas 39821.

J. C. Whitney & Co. address is P. O. Box 8410, 1917-19 Archer Avenue, Chicago, Illinois 60680.

TEACHER ENGLISH EXERCISE MANUAL

I. Enter a period, question mark, or exclamation mark in each space.

Exercise A

(1) period
(2) period
(3) question mark
(4) exclamation mark
question mark
(5) period
(6) question mark
(7) period
(8) exclamation mark;
exclamation mark or
period

Exercise B

(1) question mark
(2) question mark
(3) question mark
(4) period
(5) exclamation mark
exclamation mark
(6) period
(7) exclamation mark
exclamation mark
(8) period

Exercise C

(1) period
(2) period
(3) period
(4) question mark
(5) question mark
(6) period
(7) exclamation mark or
period
period
(8) exclamation mark
exclamation mark or
period

II. Students arrange jumbled words into the following sentences.

Exercise A

(1) Trim the flash.

(2) Place the nut into the pocket.

(3) He tightened the nut.

(4) She counted the pockets.

(5) Coat the pocket with cement.

(6) Cement the nut in the pocket.

(7) Clean cement from the holes.

(8) Screw a long screw into the nut.

(9) Trim the excess plastic from each camshaft support.

(10) Put cement in each slot.

Exercise B

(1) Select the crankshaft timing gear.

(2) Add some vegetable oil to the hole.

(3) Place the right cylinder block bottom on the right side of the frame.

(4) Cement the front frame to the cylinder blocks.

(5) Cement the left cylinder block to the left side of the main frame.

(6) Select the main frame and the three camshaft supports. Or, Select the three camshaft supports and the main frame.

(7) With a toothpick put cement in each slot.

(8) Place each part on the plan.

(9) Select eight connecting rods.

(10) Read and understand the instructions for each assembly step.

III. Enter a period, question mark or exclamation mark in each space.

Exercise A

(1) Boy ! or . Look at the spark plugs lighting up ! or .

(2) Disconnect the crankshaft segments .

(3) Did you trim off excess plastic ?

(4) Are the connecting rods turning on the crankshaft without binding ?

(5) Separate each pair of connecting rods so that the front rod of each pair is at the right hand side of the engine .

(6) Watch out ! or . Piston Half 67 only fits into Piston Half 68 .

(7) This wrist pin doesn't fit into the hole of this connecting rod . What do I do ?

Exercise B

(1) Try a wrist pin in the hole of each connecting rod .

(2) Wait ! or . Don't force the pin . Try it in another connecting rod .

(3) The head of the wrist pin is supposed to wedge into the hole of the piston .

(4) Are the front connecting rods and pistons on the right side of the main frame ?

(5) Stop it ! Can't you see the cement getting on the crankshaft ? Oh, now I see it . or !

Exercise C

(1) The rear connecting rods and pistons are on the left side of the main frame .

Exercise C (Continued) Part III

(2) Are the nuts in place on cylinder wall cap 10 ? No, one dropped out .

(3) I can't find it . Hey everybody ! or . Help me look for it .

(4) Here it is . No it's not .

(5) Assemble and cement left cylinder wall cap 11 to left cylinder block bottom 7 .

(6) Oh, I broke it . or !

IV. Students separate and underline an explanatory phrase from a sentence of the main idea with a comma.

Exercise A: Introductory Phrases and Ending Punctuation

(1) If the crankshaft is hard to turn , loosen the screws of the bearing caps .

(2) When the instructions read "gently" , don't tighten .

(3) Before tightening screws , apply cement to the snap locks .

(4) After selecting the front camshaft timing gear , color the timing mark with ink or paint .

(5) By finding the timing mark on the rear camshaft bevel gear , you can color the mark before putting the rear camshaft bevel gear on the camshaft .

Exercise B: Punctuate the sentence and underline the phrase.

(1) It's easy to align the timing marks , providing they are marked .

(2) We must carefully fit the ridges of the transmission into the slots of the bell housing , cementing them before we

Exercise B (Continued) Part IV

fit them .

(3) Mae found the lower half transmission , looking for the upper half .

(4) They really pressed the upper and lower half transmission parts together , wiping away excess cement afterwards .

(5) I found them at the parts counter , searching for a converter housing for the flywheel .

Exercise C: Some phrases are located in various parts of a sentence, underline the phrases and punctuate.

(1) I want you to meet George , who will show you the cars , and he can let you drive them .

(2) We finally found the children , playing in the back of the car .

(3) The salesman was being careful , itemizing every expense , yet being very cordial toward the customers .

(4) Repairing all kinds of cars , giving prompt service , and guaranteeing the work has been our way of building a good reputation .

(5) Clowning around the shop , that's all he wants to do , it must be stopped .

V. Students are to copy and enter punctuation without any underlines evident.

Exercise A

(1) Since the cement has dried, you can put the screw into the nut.

Exercise A (Continued) Part V

(2) Look at the drawing of step seven.

(3) Put camshaft 40 through the hole of the front wall.

(4) After rotating the crankshaft timing gear so that its timing mark is upward, adjust the camshaft timing gear so that its timing mark in downward.

(5) Are the timing marks in line with each other?

(6) As you press the rear camshaft timing gear on the camshaft, please determine if the timing mark faces upward.

(7) As you slide the rear camshaft timing gear on the camshaft, see if the bevel gear's smaller end is facing toward the rear.

Exercise B

(1) After you find the right and left cylinder inboard walls, slide them between the front and rear wall blocks.

(2) If you have trimmed flash from the upper and lower base braces, you are ready to cement the braces where they cross.

(3) Select converter housing 116 and flywheel 117 and trim all flashing from these parts.

(4) When you look at the drawing, you can see how the flywheel and the converter housing fit together.

(5) Please find the two halves of the oil pump to cement together.

(6) After placing the screen housing pipe in lower half oil pumper trough, what do you do next?

Exercise C

(1) As you measure two lengths of wire, your partner should cut

Exercise C (Continued) Part V

the wire.

(2) After cutting the wire, strip the insulation from the ends.

(3) Find the brass battery contact and bend it slightly in the middle.

(4) When you insert the bare end of the wire into the hole, you are beginning to make a connection.

(5) By placing a bared end of the other wire through a hole, you are repeating the process.

(6) Bend each wire into the slots as shown.

VI. Test Exercises of commas after introductory phrases and sentence endings.

(1) Help ! He's being shocked ! or .

(2) Why did he play with the electrical outlet ?

(3) After he rests awhile , he will be all right .

(4) When you finish sliding the brass battery contact in the grooves of the battery , you should bend each wire into the slots as shown .

(5) Find two battery switch buttons 99 and two brass eyelets .

(6) After inserting an eyelet about halfway into each switch button , the remaining ends of the wire 6" long and the wire 15" long are connected to the eyelets.

(7) After the 6" long wire is connected to an eyelet, the 15" long wire is connected to the other eyelet .

(8) When you find the switch plate , you place the button switch with the 6" wire through the upper hole .

Test Exercise (Continued) Part VI

(9) Place the other button switch through the lower hole .

(10) If you are certain the coil button is on the bottom of the switch plate , slide the switch plate into the battery box .

(11) If you have not removed the excess plastic from the pinion gear , do not press the pinion gear on the shaft of the electric motor .

(12) Slowly press the pinion gear on the shaft of the electric motor .

VII. Compound sentences may be connected by a conjunction preceded by a comma. The conjunctions are: and, but, for, yet or, nor.

Exercise A: Put a proper conjunction in each blank.

(1) The nuts fit into the pockets of the main frame, and but you need a screw for every nut.

(2) The model crankshaft is made into segments, but a real crankshaft is all one part.

(3) You must read the instructions carefully, or you will make mistakes.

(4) Mistakes by a mechanic make a customer unhappy, and the customer tells others about the service.

(5) You may screw the half-bearings gently to the frame, and but you will find a half bearing may be too tight on the crankshaft.

(6) Neither just looking at the diagrams will make the model, nor reading only the Instruction Booklet will make the model.

(7) Two half pistons 67 will not fit together, but a half piston

Exercise A (Continued) Part VII

67 will fit a half piston 68.

Exercise B: Put a comma in the proper place.

(1) The pistons slide into the cylinders, but you must fit the cylinder block carefully on the main frame.

(2) Cement is added to the slots of the cylinder blocks, and the front block wall fits into the slots.

(3) The timing mark of the camshaft timing gear is aligned with the timing mark of the crankshaft timing gear, or you must adjust the camshaft timing gear to align the marks.

(4) The camshaft bevel gear fits on the camshaft with its smaller end nearer the end of the camshaft, for it must mesh with a gear from the distributor.

(5) On a real engine the inboard cylinder block walls are not slid into slots of the front and rear frames, nor are they apart from the cylinder blocks.

Exercise C: Put a comma and correct conjunction in place to connect the sentences.

(1) The model base is not part of the engine, nor does the battery of a car have buttons on it.

(2) The gears in the starter housing may be hard to assemble, but /yet I know you can do the job.

(3) The bell housing is cemented to the transmission, and/for the retainer is cemented to the bell housing.

(4) The upper and lower parts of the oil pump traps the pipe, and/yet/but the pipe is to twist inside the oil pump.

Exercise C (Continued) Part VII

(5) You must attach the long wire to the eyelet of the bottom button, for the shorter wire will not reach the coil.

VIII. Words or phrases used in series are separated by commas.

Exercise A: Apply commas in correct places.

(1) Select ten screws, five bearing caps, the crankshaft, and the main frame to begin assembling step three.

(2) You will need sixteen half pistons, eight wrist pins, and the eight connecting rods on the crankshaft in order to do step four.

(3) Cementing the right cylinder block bottom to the cylinder block, sliding the right side pistons into the cylinders, and cementing the cylinder block to the main frame are half of the steps of assembly in step five.

(4) Four screws, cement, the front block wall, the rear block wall, and the main frame are needed for step six.

(5) The camshaft parts include the front camshaft timing gear, the camshaft, the rear camshaft bevel gear, and the rear camshaft retainer.

Exercise B: In some instances clauses are in series. Distinguish between clauses, which are sentences within a sentence, and phrases.

(1) In Drawing B, the pinion gear fits inside the starter case, the electric motor fits inside the housing, and the housing is screwed to the starter case.

(2) A diagram of the battery shows two brass contacts, two buttons, four wires, one switch plate, and the top and bottom of the

Exercise B (Continued) Part VIII.

case.

(3) The three parts mentioned in step fourteen are the oil pan, oil pan drain plug, and oil dipstick support.

(4) Two long screws for the starter, three long screws for the bell housing, and one short screw for the bell housing are all of the screws shown to be added in step fifteen.

(5) The battery in step sixteen shows four wires, one motor button, and one coil button.

Exercise C: More series and ending punctuation.

(1) Step seventeen requires trimming, fitting, taking apart, cementing, then the fitting again of parts.

(2) Two halves of the carburetor, two halves of the oil filter, and two halves of the air cleaner are shown in step eighteen.

(3) You are to add vegetable oil to the impeller shaft, slide the impeller shaft inside the front water pump housing, and fit the end of the impeller shaft into the hole of the rear half pulley.

(4) The three parts of the fuel pump shown in step 21 are the actuator arm, the front half of the fuel pump, and the rear half.

(5) You are to cement the generator pulley/fan half to the generator half pulley, slide the generator shaft through the front generator case plate, and cement the pulley/fan to the end of the shaft.

IX. Comma punctuation in friendly letters required explanation of

Part IX (Continued)

letter form and phrases in sentences in the body of a letter.

Exercise A: Put commas in the proper places.

2009 Bradford St.

Partridge, Texas 78910

January 17, 1978

Dear Fred,

How are you? I am doing fine, but I missed you at your job in the garage. They told me you had moved and left this address. Write when you can.

With best regards,

Mike

Exercise A Continues on next page.

Exercise A (Continued) Part IX

559 Tenth Street

Amber, Texas 43210

February 5, 1978

Dear Fred,

I hope you got my letter, and you are too busy working to write soon.

As you can see, I have moved to Amber. It's a nice little city, and I am glad the company sent me here. The city is located on the Gulf, and our company has a lot of engine overhauls and car body repair due to the salt water.

If you do not answer either of my letters, I'll know I have the wrong address and will not write again.

Best regards,

Mike

Exercise B: Commas in the proper places

See next page for exercise.

Exercise B (Continued) Part IX

832 Bridge Street
Alpine, Texas 85760
October 26, 1978

Dear Fred,

It's true, and you must think I like to travel, but the firm moved me way out here. It really is a long way from the Gulf. Wow! There's a big difference between Alpine and Amber, for there is no water to write about, but the mountains are very pretty, and we are near the McDonald Observatory.

Our company does a lot of business in medium sized cities like Midland and Odessa, due to the oil and associated businesses. We are busy enough with mountain driving and desert dust in areas around us, many car engines need repairs.

When we both have some days off, let's try to meet some place and talk things over.

Best regards,
Mike

Exercise C: Put commas in needed places. Part IX

832 Bridge Street
Alpine, Texas 85760
December 15, 1978

Dear Fred,

Boy! It was great to get your letter. I'm glad you were able to get back to your old job at the garage. Why don't you ask the manager for a few extra days off and come to Alpine?

They are really getting the snow in the mountains, and we are getting a lot of work from cars that have frozen their radiators, split hoses, and broken seals in their blocks. Neither the cars, nor the drivers were prepared to go on these mountains in such heavy snows.

Write when you get a chance, whether you can come or not.

Your friend,
Mike

X. Quotation Marks used to show that someone is speaking. Place quotation marks after ending punctuation, if the ending punctuation is part of the quotation.

Exercise A: Place quotation marks in the correct places.

(1) He said, "I am going to take off the water pump."

(2) She said, "I don't believe that is what is wrong with the car."

Exercise A (Continued) Part X

(3) "Is the radiator clogged?" she asked.

(4) "Here is your trouble," he said. "The thermostat needs to be replaced."

(5) A salesman asked, "How many miles has your car been driven?"

Exercise B: Quotation marks are used when words, sentences, and paragraphs are quoted word for word.

(1) The book says to remove the vibration damper on all American Motors cars we must, "Remove the radiator core and fan. Remove the nut from the center of the pulley and, using a puller, remove the pulley from the front of the crankshaft."

(2) The next heading is, "Timing Case Cover R & R."

(3) I'll read it just one more time; the book says, "Remove the drive belts. Remove the engine fan and hub. Remove the vibration damper pulley and remove the vibration damper."

(4) He read, "Assemble the timing chain, crankshaft sprocket, and camshaft sprocket with the timing marks aligned as shown in the illustration."

(5) I am quoting from Chilton's Auto Repair Manual 1976 which reads, "This manual is indexed in three ways: The Table of Contents, which follows the title page of the book, lists the beginning of each Car and Unit Repair Section in the manual."

XI. Punctuation, including quotation marks, is reviewed. Quotation marks are used to show a title of a chapter or another heading

XI. (Continued)

within a book.

Exercise A

(1) If you are looking for information on the manifolds of the Elite, it's under "Exhaust Manifold Removal".

(2) "Engines" is the title of a fine article in that magazine.

(3) The diagram of the rocker arm is shown above and is entitled "Boss 302 Rocker Arm Assembly".

(4) What does the book say? It says, "Clean all manifold mating surfaces and place a new gasket on the muffler inlet pipe."

(5) I read under the heading "V8 Engines -- Except 428CJ and 429 Boss".

Exercise B: Quotation marks are used to enclose names of ships and airplanes and titles of radio and television programs. Include all necessary punctuation.

(1) Did you see the commercial on "The Chevrolet Show"?

(2) I liked those big Mark V Continentals on "The Ford Show".

(3) This old ship, "The Grey Goose", came in for an overhaul job.

(4) "The Grey Goose!" they exclaimed, "Why that ship was supposed to have been scrapped ten years ago."

(5) They really made a good engine for "The Spirit of St. Louis".

XII. Reviewing punctuation, discriminating literal and figurative language.

Exercise A: Reviewing punctuation

(1) In his tool box were: pliers, screwdrivers, open end

Exercise A (Continued) Part XII

wrenches, boxed end wrenches, and socket wrenches.

(2) The Assembly Manual says, "Install gears A, B, and C in alphabetical order (letter side up) as shown."

(3) Later on it says, "Press the pinion gear onto the shaft protruding from the starter housing."

(4) In the Instruction Booklet under "Battery" it says, "Find insulated wire, cut two 6" and two 15" lengths of wire, and strip 1/2" insulation off the ends of each wire."

(5) Under "Step 13 Starter" of the Instruction Booklet, it says, "Select and trim Gear A (45), Gear B (46), and Gear C (47) and install them in alphabetical order with the letter side up."

Exercise B: Figurative language is often a comparing of something factual with something else that is not related to the face expressed.

Literal language is factual, without exaggeration, or the use of the imagination.

(1) This 1977 Pinto has four cylinders. literal

(2) The engine runs as smooth as a bee gathering honey. figurative.

(3) The Granada's wheel base is 110 inches. literal

(4) The Thunderbird is a Ford. literal

(5) When you drive a Thunderbird, you'll feel like you are riding on a cloud. figurative.

(6) A Mercedes - Benz owner is known as one who believes in having the finer things in life. figurative.

Exercise B (Continued) Part XII

(7) The salesman said, "You buy one of those little cars, and you'll bobble up and down like a cork on the water." figurative.

(8) The wholesale price for the 1975 Ford Gran Torino is $2,250.00, and the retail price is $3,000.00. literal

(9) Cement rear block wall to the cylinder block at the slots, and it will look like a space machine from Mars. figurative.

(10) Press a brass eyelet halfway into a switch button, connect the end of a wire, and push the eyelet all the way into the switch button. literal

Exercise C: Review of punctuation.

(1) When Mike was working on the ignition system in their garage, Marie was removing the cartridge from the air cleaner.

(2) They checked the water in the battery, the oil level, the transmission oil level, the coolant in the radiator, and filled the car with gas.

(3) The service station attendent said, "I think you are a quart low on oil."

(4) "It really does cost a lot to have a valve job done on a car," he said.

(5) "Why me?" I moaned, "Why am I the one who is always stuck with the big repair bills?"

(6) The mechanic grinned, "You need to follow your car maintenance schedule."

Exercise D: Punctuation review

Exercise D (Continued) Part XII

(1) After picking up the tools, nuts, bolts, washers, and cleaning the grease off the floor, the mechanic's helper knew a lot of work was needed, besides car work.

(2) "My first big job on a car was to remove and replace a water pump," he said. "It really was hard to do within the short time they gave me to do it."

(3) The man was in a Ford, pulling a Buick with a lady steering it.

(4) "You must come to see, feel, and enjoy the cushioned luxury of these new seats in our new model Cadillacs," the salesman said over the phone.

(5) "We have Cadillacs, pickups, Oldsmobiles, and Chevrolets," the quartet sang to the tune of their commercial.

XIII. Test - Punctuation

Test Exercise: Put the necessary commas, ending punctuation, and quotation marks in the proper places.

(1) The mechanic said, "Help me lift this cylinder head from the block."

(2) "Look at that! There's a silver dollar in the oil pan," I said.

(3) He pulled on the chain of the pulley to lift the engine from the housing.

(4) I slid a wooden block under the engine, and the mechanic gradually eased the engine on the block.

(5) "We replaced a water hose, a water pump, connecting rods

Test Exercise (Continued) Part XIII

and a vibration damper this morning," the mechanic said.

(6) "If I unscrew these screws, will the cylinder come off?" I asked.

(7) "Try it and see," he replied.

(8) "We must be sure to use the right kind and grade of motor oil for each car, or we may cause a lot of trouble," he said.

(9) "There was an interview, an application to fill, and references to get for this job," I told them.

(10) I needed the main frame, crankshaft segments 55A, 56B, 57C, 58D, 59E, 60F, 61G, 62H, eight connecting rods, eight wrist pins, and sixteen piston halves to get every thing for the cylinder blocks.

XIV. The colon may be used to begin a quotation, to begin a series of words, phrases, or statements. A colon follows the salutation of a business letter. The semi colon may take the place of a comma followed by a conjunction or take the place of a period, and connects two sentences.

Exercise A: Students place the colon and semi colon in its proper place.

(1) The order of firing by the spark plugs is as follows: 1, 8, 4, 3, 6, 5, 7, 2.

(2) The process of cleaning the pan is as follows: remove the plug, drain the oil, unscrew the bolts holding the pan, and clean the pan of all refuse.

Exercise A (Continued) Part XIV

(3) The student recited, "The movement of gasoline in a car is as follows: The gasoline goes from the gas tank to the fuel pump; it pumps the gas to the carburetor; the gas is mixed with air from the air cleaner; the vapor goes through the intake manifold. When the intake valves open, the gas vapor goes into the cylinders; the piston compresses the gas; the spark plug has an electric spark at that time, and the gas explodes. All that is left is the smoke that goes out of the exhaust manifold."

(4) The mechanic told the helper to do these things before leaving: put all tools in their places; put dirty rags away; throw broken parts, stripped bolts, and nails into the bucket; scrape the floor; sweep the floor; clean the counter; put away the lamp; and turn out the lights.

(5) He told me all those things; I wanted him to write them down for me.

Exercise B: Students are to punctuate the following business letter.

Letter is found on next page.

Exercise B (Continued) Part XIV

1608 Market Street
Elbridge, Texas 70170
January 19, 1978

Mr. John A. Conklin
Parts Manager
Service Parts Co.
P. O. Box 5002
Harner, Texas 89899

Dear Sir:

Please send to the Car World Company at the above address the following crankshaft kits:

1976 Buick Special V8, 430 eng. 19-5978AE;
1972 Cadillac, 472 eng. 99-6160 YFE;
1976 Chevrolet, 250 eng. 19-5986 UE.

Bill us after you have sent this order.

Yours truly,
Kim Randor

XV. Students are to recognize that advertising is directed at originating, stimulating or developing feelings that create a desire to buy the product advertised.

Exercise A: The following advertising is to be classified as either "economic" or "luxurious". Student is to select "economic" or "luxurious" as the term describing each statement.

Exercise A (Continued) Part XV

(1) When you drive your new Mark V, others will know you believe in having the best. luxurious

(2) After driving this thrifty car, you'll smile each time you pass the gas pump. economic

(3) You will be amazed at the beautiful colors of this car's interior. Only the finest materials are used. The styling shows exquisite taste. luxurious

(4) Attend the finest parties; your car will be admired by the finest people. People who know what elegance really is. luxurious

(5) You can't get more for your money when you buy our car, and it will save you money day by day in every way. economic

Exercise B: The following advertising attempts to bring about snob appeal or criticism of large cars. Students enter "snob" or "put down" in the appropriate blanks.

(1) There has never been another car like this. Only the finest materials are used; price is no object when we build. snob

(2) Why drive a gas guzzler when you can drive our high performance low consuming car? put down

(3) Extra weight means extra waste. put down

(4) With the finest engineering and styling by experts, you need the comfort and roominess of this new car. snob

(5) When you buy from us, you have chosen to become a fellow customer alongwith the most outstanding people in the whole world. It's truly a car for nobility. snob

Exercise C: The following advertising appeals to those who like sports, or those who like small cars for reasons other than economy. Students are to enter "sport" or "small car" in the appropriate blanks. Part XV

(1) You ought to try out this beauty. It has mag wheels, overhead cams and has done 0 to 50 in 7 seconds. sport

(2) Havoc Limited has done it again. Their Lombard Special has a bold restyling that has adapted ideas from other cars and includes some fine ideas of their own. One such idea is the change from four speeds to five, which enables the Lombard Special to cruise at 60 m.p.h. with only 2410 r.p.m. sport

(3) Compare our O/H with the others: the Pinto, Vega, Chevette, Fiesta, or the Nova. The Nova is nearly 32 inches longer, 7 inches wider but has less room inside than our O/H. Try the O/H; you'll like it. We know you will. small car

(4) "You've got to think big, if you want to succeed" is a saying of long ago that is as modern as today, and this Tiger Shark is every bit of it. It is planned to top the exotic luxury car standards as well as to be the world's fastest production line model. sport

(5) Here is GFX Appeal with a 212 SX engine that will light your fire. It took Flaxton designers to engineer and equip such a car for the demanding and discriminating driver. sport

XVI. The uses of the Apostrophe

Exercise A: The apostrophe showing possession. Students add

Exercise A (Continued) Part XVI

the apostrophe.

(1) This is Alan's car.

(2) Mike's car is next to Jane's.

(3) The next three cars are Helen's, Lois', and Bob's.

(4) The car's radio is not playing.

(5) A mechanic's job is plenty busy at times.

Exercise B: The apostrophe saves a letter or letters. Students add the apostrophe.

(1) Won't you come over for dinner?

(2) I'll have to think about it; I'll let you know if I can't make it.

(3) You'll finish my car by tomorrow afternoon, won't you?

(4) When'll you be through with this valve job? You've got plenty waitin' for you.

(5) "Ev'ning Mrs. Jones, this'll be ready in 'bout fifteen minutes," Larry said.

Exercise C: Apply the apostrophe to show ownership or to omit letters. Write "possession" or "place taking" in the blanks.

(1) I can't say that I've seen an engine like this. place taking

(2) I'd like to see the inside of that engine. place taking

(3) This engine's valves are burnt. possession

(4) How's this for a sweet running engine? place taking

(5) The kid's car cost each of them $300.00 to own it; they are all partners, and each kid's name is on the title. possession

XVII. Tenses of verbs.

Exercise A: Write "past", "present", or "future" to indicate verb tense. Part XVII

(1) I got a camshaft at the parts counter thirty minutes ago. past

(2) Our mechanic will have the job done in about two hours. future

(3) Without a car, I walked into town. past

(4) "I shall walk in this line as long as anyone," the old man declared. future

(5) I drove the car all of the day without any trouble. past

Exercise B: Write the proper tenses of the verbs in the sentences. Underline the verbs.

(1) I tighten the bolts to 20 pounds pressure every time. present

(2) I tightened this one too tight. past

(3) I have tightened all of the bolts. past

(4) I will tighten these, then I'll go to lunch. future

(5) He did a good job on this engine. past

(6) He will do a good job everytime. future

(7) He has done fine work today. past

(8) They will become fine mechanics some day. future

(9) They are good mechanics now. present

(10) They have been the best mechanics in our city for many years. past

XVIII. Pronouns in subject and object positions; verbs and their tenses.

Exercise AA: Pronouns in subject positions. Record the proper verb tense in each blank. Underline the pronoun that is the

Exercise AA (Continued) Part XVIII

subject.

(1) I pulled the light toward the engine. past

(2) We jumped the spark to the block with a screwdriver across the sparkplug wire. past

(3) They worked until 6 o'clock. past

(4) She works as long as anybody. present

(5) We will replace the valves. future

(6) We grind and replace valves in all makes of cars. present present

Exercise A: Students underline the pronouns in the sentences and write "possessive" or "objective" in the blanks according to the function of the pronoun.

(1) Because of their bad checks, Crains does not do business with them. possessive, objective

(2) Our car ran right by them. possessive, objective

(3) His car and her car look alike. possessive

(4) The engine purred like a kitten to his ears. possessive

(5) The truck pulled us out of the ditch. objective

Exercise B: Students underline the subjective pronouns, encircle the objective pronouns, put two underlines beneath each verb and write the verb tenses in the blanks.

(1) We drove the car slowly. past

(2) You will drive several hours before you will arrive. future, future

(3) They thought the truck was great. past, past

Exercise B (Continued) Part XVIII

(4) Because of them, we worked into the night. past

(5) We were running them until they wore out. past, past

Exercise C: Underline subjective pronouns, encircle objective pronouns, put two underlines under the verb or verbs, and write the tenses in the blanks.

(1) We cemented each nut into the pockets. past

(2) There are fifteen of them to cement into the pockets of the main frame. present

(3) We screw each of them to the main frame. present

(4) They will wedge a wrist pin into the holes of each piston. future.

(5) After they colored the timing marks, they aligned the marks; I was pleased with them. past, past, past.

(6) You thought I could do the job; because of you, I became a successful mechanic. past, past, past.

(7) The screen clogs up with oil and water. Is the water coming from the cracked cylinder head? I will find out soon. present, present, present, future

Exercise D: Enter words under proper headings.

(1) You work on the crankshaft, and I will grind the valves.

(2) He wiped the grease off of the bearing and set it on the table.

(3) He washes each part in gasoline and looks at them very carefully.

(4) He will work ten hours a day on cars, if you will let him.

Exercise D (Continued) Part XVIII

(5) She help him; when she reads the instructions, he understands.

Please refer to next page for chart.

Exercise D: Enter words under proper headings. Part XVIII

SEN.	SUBJ.	VERB			OBJECT	NOUNS		PRONOUNS	
		PAST	PRES.	FUT.		SING.	PLUR.	SING.	PLUR.
1	You, I		work	will grind	camshaft valves	camshaft	valves	You I	
2	He	wiped set			it grease bearing table	grease bearing table		He it	
3	He		washes, looks		them, part, gasoline	part, gasoline		He	them
4	He, you			will work let	hours, day, cars him	day	hours cars	He you	
5	She he		helps, reads, understands		instructions him		instructions	She him he	

Exercise E: Underline the prepositional phrase of each sentence.

Part XVIII

(1) The student added cement to the pistons.

(2) The student turned the camshaft timing gear, until it was at the mark.

(3) The student pressed the upper base brace slowly on the lower base brace.

(4) The holes of the flywheel were cleaned.

(5) The oil pump's pipe is trapped by the housing.

Exercise F: Underline each prepositional phrase and the preposition twice.

(1) Of all of the steps of assembly, step six may be the hardest.

(2) When you are marking the crankshaft and camshaft timing marks, there are two more of the gears left to mark.

(3) Turn the flywheel to the right, now turn the converter housing to the left, and press the flywheel on the converter housing.

(4) Trim the flash from the halves of the transmission, and I will put some of the cement on the toothpick.

(5) Fit the transmission into the slots of the bell housing.

Exercise G: Underline the adjectives within the prepositional phrases.

(1) Find the retainer for the transmission, and put some cement on one of the sides of the retainer, then press the retainer against the bell housing and around the protrusion of the bell housing.

(2) After you have stripped one-half of an inch of the insulation

Exercise G (Continued) Part XVIII

from the ends of each wire, connect the six inch length of wire to the brass battery contact.

(3) Place one end of the plain battery contact into the end of the battery box with the pocket at the bottom of the box.

(4) After you have found the oil dip stick support, look for the grooves on the block and slide the oil dipstick support into these grooves.

(5) The flywheel assembly slides on the rear end of the crankshaft.

XIX. Writing good paragraphs.

Exercise A: Underline the subject matter sentence.

You must be careful when you install the gears inside the starter gears case.

Exercise B: Underline the subject matter within the subject matter sentence.

The power train of a car is the supplying of power that originates in the engine and is transferred, through different car parts, to the wheels.

Exercise C: Of the three paragraphs check the one that is well written.

(1) X (2) ______ (3) _____

XX. Make a new paragraph whenever a different person is quoted as speaking.

Exercise A

The teacher was reading about the differential consisting of gears designed to permit the wheels to turn at different speeds

Exercise A (Continued) Part XX

when a corner is turned.

One student interrupted, "Teacher, how can they do that? I don't see how the gears would know when a corner was being turned."

Exercise B: Have proper paragraphs and quotation marks.

"The fuel pump is operated by an eccentric cam at the front end of the camshaft," I said.

The class wanted to know what is meant by an eccentric cam.

One of them said, "Oh! I know! An eccentric cam is one of those lumps on the camshaft."

"You are right," I said, "but all of those lumps have a function."

Exercise C: Locate paragraphs and indent.

The carburetor is the part of the fuel system where air is mixed with gasoline, making a vapor. Air comes through the air cleaner, into a tube where it mixes with the gas that goes through a fuel jet to the tube.

Oil is pumped from the oil pan, through a filter, and between various engine parts to reduce friction and heat. Oil also prevents power losses from friction, and it washes away dirt and particles of metal.

Exercise D: Locate the paragraphs and indent.

A car's generator changes mechanical energy from the crankshaft pulley to the generator pulley, into electrical energy needed for ignition, lights, radio, heater, air conditioner, and other electrical needs.

The battery changes chemical energy into electrical energy.

Exercise D (Continued) Part XX

It is used to start the engine, plus the other electrical units when the generator doesn't supply enough current.

The starter is an electric motor designed to crank the engine in order to start the engine. When the starter is operating, its pinion gear is thrust forward and engages the teeth of the flywheel.

XXI. Identify a paragraph when it is within another.

Exercise AA: Making two paragraphs, indenting.

The distributor sends a high tension current to a cylinder's spark plug at the same time its piston reaches the top of the compression stroke. The distributor cap receives the current and passes it to the rotor. As the rotor rotates inside the distributor housing, it distributes current to each terminal, according to the firing order. The distributor rotor is driven by the camshaft.

The coil is a transformer that steps up the six or twelve volts of the battery to about 20,000 volts.

Exercise A: Students are to originate a sentence for each paragraph. Teacher determines if student's sentences are part of the subject matter.

Exercise B: Select the subject matter sentence from the paragraph.

Answer: The joy of driving is the feel of freedom.

Exercise C: Select the subject matter sentence from the paragraph.

Answer: Of over two dozen small cars now on sale in this country, none offers the American driver more things he looks for in a car than the Dodge-Plymouth O/H.

XXII. Arrange material on a billing sheet.

See examples.

XXIII. Student formation of a script simulating a radio skit, defining words.

Exercise A: Outline of script material refer to Student Exercise Manual.

Exercise B: Give the definition of "retainer" or "guide" as they are used in the following sentences. Underline the words "retainer" and "guide" in the sentences given.

(1) Fit the retainer on the collar of the transmission to secure the bell housing. A part that keeps or holds something.

(2) I went to the lawyer for legal work, and he asked for a retainer of $500.00. Money paid for legal services.

(3) We hired a guide who took us to a lot of interesting places in the European city One who helps others by taking them to places of interest.

(4) Insert the distributor wire through the right inside guide, then connect the wire to the forward spark plug. Something that forces a certain path for the wire to follow.

(5) The pilot showed how expert he was; he could guide this ship to any part of the harbor. The steering of the ship.

Exercise C: Refer to Students Exercise Manual for information providing material for script on car trading.

XXIV: Identifying word definitions according to the uses of words in

qty	Stock No.	Amt.	THE MOTOR COMPANY SOMEWHERE TEXAS			Time am pm	air/con ☐	Labor
6qt	Oil Quaker						Oil ☒	
	State 10 40 wt	6.60	bill to			del. y n	filter ☒	5.00
1	Oil filter		address			ordr.	air/cln ☐	
	Cartridge	5.65	customer Mr. Joe Deakes			By	Tran/O ☐	
			address 4130 Acorn Avenue, Belsteed, Tx. 39880			Mi. 36035	Diff/O ☐	
			Mod.	make Ford Torino	res. ph. 300-001-90100	Lic. Tex.007	X tires ☒	10.00
			date 1973	serial no. LA-21S 14 6273	bus ph.	Yr. 1973	Flush cool. ☐	
			Opr.	Repair - Labor Instructions		wx ☐	Wash ☐	
			3	Change oil, filter, adjust valves, rotate tires				
								15.00

			Authorization for repairs			labor	30.00
no.	sub. rprs.	Amt.				parts	
			Customer sign.			acces	5.65
			Warranty statement	Acct	Chrg	Cost	g.o. gr.	6.60
	total					subl. rep.	
	access.		Gals. Gas @	☐ cash		tax	
			Qts. Oil @	☐ chrg			
			Lbs. Grease @	☐ intr			
	total acc		Total	By		tot.	$42.25

Part XXII Exercise 7

Part XXII Exercise B

THE MOTOR COMPANY
SOMEWHERE TEXAS

qty	Stock No.	Amt.
6	Exhaust Valves	
	55-1426P	21.60
6	Intake Valves	
	55-1436R	19.80
1	Air Cleaner	
	Cartridge	5.78

bill to Rite Seen Cleaners
address 101 Bush St. Somewhere. Tx. 44509
customer Mr. Jason Carter
address 3100 Bolick St. Somewhere, Tx. 44001

Mod.	make Chevrolet Panel Truck	res. ph.	
date	serial no.	bus ph. Sec 100-67432	

Time am pm	
del. y n	
ordr.	
By	
Mi.	44321
Lic.	TX 155
Yr.	1972
wx. ☐	

air/con	☐	
Oil	☐	
filter	☐	
air/cln	☐	
Tran/O	☐	
Diff/O	☐	
X tires	☐	
Flush cool.	☐	
Wash	☐	

Opr.	Repair - Labor Instructions	Labor
	R+R Valves, adjust valves	48.00
	R+R Air Cleaner Cartridge	1.00

Authorization for repairs

Customer sign.

Warranty statement

no.	sub. rprs.	Amt.
	total	
	excess.	
	total acc	

Gals. Gas @
Qts. Oil @
Lbs. Grease @
Total

☐ cash
☐ chrg
☐ intr
By

Acct	Chrg	Cost

labor	49.00
parts	47.18
acces	
g.o. gr.	
subl. rep.	
tax	
tot.	$96.18

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Part XXII Exercise C

THE MOTOR COMPANY
SOMEWHERE TEXAS

Qty	Stock No.	Amt.
1	Spark plugs	
	Set of 8	11.98
1	Distributor	
	Kit	3.38

bill to Mrs. Grace Gomez
address 2318 Rogers St. Somewhere, Tx. 44003
customer
address

Mod.	make Cadillac	res. ph. 100-1503
date	serial no.	bus ph.

Time am pm	air/con ☐	
del. y n	Oil ☐	
ordr.	filter ☐	
By	air/cln ☐	
Mi 52061	Tran/O ☐	
Lic. Tx 5 18	Diff/O ☐	
Yr. 1973	X tires ☐	
wx. ☐	Flush cool. ☐	
	Wash ☐	

Opr.	Repair - Labor Instructions	Labor
	Tune up -- R+R Spark Plugs, Distributor points, and Condenser, adjust carburetor, check timing, check fuel pump, check compression and valves	18.00

Authorization for repairs

Customer sign.

Warranty statement

Acct	Chrg	Cost

no.	sub. rprs.	Amt.
	total	
	access.	
	total acc	

Gals. Gas @		☐ cash
Qts. Oil @		☐ chrg
Lbs. Grease @		☐ intr
Total		By

labor	18.00
parts	15.36
acces	
g.o. gr.	
subl. rep.	33.36
tax	1.67
tot.	$35.03

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XXIV: (Continued)

sentences.

Exercise A: Write the definition of the underlined word.

(1) We are moving to another apartment, because we don't like to pay this much for housing. A place to stay, to live in.

(2) When you have finished cleaning that saddle, don't forget the housing. Covering for the saddle.

(3) He tightened the brace about the bit and bored a hole into the wood. A tool to turn and cause a bit to bore holes.

(4) The dentist cleaned, adjusted each brace, and put them on the patient. Fittings on teeth to straighten teeth in the mouth of a young person.

(5) The commercial was about "ring around the collar". The part of a shirt that fits around one's neck.

(6) The collar of the flywheel must be outside of the converter housing. Collar - part of the flywheel that is in the center and protrudes from the surface. Housing - part that covers other parts of the engine.

Exercise B: Write the definition of each underlined word in the sentences.

(1) The farmer removed the collar from each of the mules after they returned from the field. A pad that fits around the neck next to the shoulder.

(2) The student built the stand by using a brace to support the weight of his model. A prop to keep something from falling.

(3) The gears of the starter are protected by the housing. A

Exercise B (Continued) Part XXIV

covering to shield the gears.

(4) The policeman said he would collar that thief, and he did.
Catching by the neck or collar of coat or shirt.

(5) The sailor ran to the brace, and soon the sail was trimmed.
Part of a boat used to adjust sails.

(6) The real estate man told us about a new housing development
A section or part of land with houses for sale.

XXV. Language on the billing sheet and check.

Exercise A: Abbreviations and terms used on the billing sheet.

Qty. - quantity; no. - number; a.m. - morning; p.m. - afternoon and evening; Oper. no. - Operator number; X tires - rotate tires; adj. - adjust; diff. - differential; trans. - transmission; cart. - cartridge; acct. - account; & - and; gals. - gallons; qts. - quarts; lbs. - pounds; OK'd - it is all right; cust. - customer; bus. - business; res. - residence; cool. - cooling; cond. - conditioner; auto. - automatic; @ - at

air cond. - air conditioner; sublet - send parts to be repaired to another company; internal summary - information for office use; flush cool system - flush cooling system; accessories - parts added to the car, such as tape deck, C.B. radio, etc.

Exercise B: Significance of check vocabulary and numerals.

1. Check number - should be recorded in case of lost check or bad check.
2. Date location - usually on the upper right of the check.
3. Pay to the order of - one to receive the money of the check;

Exercise B (Continued) Part XXV.

who is to endorse the check.

Payee - same as "Pay to the order of".

4. Amount of the check - write in numerals back of the dollar sign.

5. Write the dollars and the numeral in cents over one hundred.

   Ex. Twenty & 32/100 ------. Mark after the fraction as shown to the word "Dollars".

6. "Memo" and "For" located in the lower left is to give the reason for the check or policy number if the check is payment on some policy.

7. Payor signs the check on the line on the lower right part of the check.

8. Coded numerals at the bottom left of the check. The first series of numerals are for the bank's identification; the second series of numerals are for the identification of the payor of the check, this is the payor's account number. When a check is to be deposited, the endorser should write his/her own account number beneath the name signed. This account number is different from the account number of the check being endorsed.

   Check should be filled in as follows: (See next page)

Exercise B (Continued) Part XXV

SOMEWHERE NATIONAL BANK
Somewhere, Texas 99999

0001

____________________ 19____ 00-000
0000

Pay to the
Order of ____ $ ______________

____ DOLLARS

Memo ____________________ ______________________________

1113'''0242: 40 320 1

Exercise C: Write the correct definition of underlined words

(1) The farmer bought chick starter for the baby chicks.

Food to be fed to baby chickens.

(2) The starter raised the gun and fired; the 100 meter dash began.

The official that starts the race.

(3) The pinion of one wing was clipped.

Feathers and tip of the wing of a bird or chicken.

(4) He was proud of his antique pinion quill.

A quill or pen that came from the wing tip of a duck, goose, or turkey.

Exercise D: Write the definition of the underlined word as it is used in the sentence.

(1) Turning the key in the ignition activates the starter.

Exercise D (Continued) Part XXV

Part of the engine that turns by electricity and turns the parts of the engine so the engine starts.

(2) The pinion gear meshes with the flywheel.

A small gear that meshes with a large gear.

(3) The officers attempt to pinion the arms of the husky criminal.

To fold the arms of a person behind that person's back.

(4) The pinion nuts were tasty eating.

Nuts from a pinion tree.

(5) The starter was left out of the bread mix.

A mixture with bacteria that causes fermentation in the bread.

XXVI.

Exercise A: See billing sheet.

Exercise B: Give correct definition for each underlined word.

(1) The cowboy pulled his rope into a coil.

Made loops of the same size.

(2) The snake was in a coil when I saw it.

Made circles or rings of its body.

(3) You can see how the pipe of the air conditioner is in a coil for a great length in a small space.

The turns or winding of the pipe.

(4) The coil did not supply enough electricity for the engine.

Loops of wire wound into a spiral.

Exercise C: Give the correct definition of each underlined word.

(1) His mother told him to clean his plate.

Part XXVI Exercise A

Qty	Stock No.	Amt.	THE MOTOR COMPANY SOMEWHERE TEXAS			Time am pm	air/con ☐	Labor
1	Set 8 Cyl. piston						Oil ☐	
	rings 4⅛ bore		bill to Custom Insurance Co.			del. y n	filter ☐	
	11-0576 P	15.49	address 3451 Elkins, Somewhere, Tx. 98100			ordr.	air/cln ☐	
1	Set Connecting		customer John A. Jenkins			By	Tran/O ☐	
	rod Bearings		address			Mi. 25,249	Diff/O ☐	
	37-47178	12.98	Mod.	make Chevrolet Empala	res. ph.	Lic. [illegible]	X tires ☐	
1	Kit Distributor		date	serial no.	bus. ph.	Yr. 1972	Flush cool. ☐	
	tune-up		Opr.	Repair - Labor Instructions		wx. ☐	Wash ☐	
	55-13174	1.59		Replace piston rings, connecting rod bearings,				
6	Qts. Oil	6.60		tune-up, replace points and Condenser				360.00
1	Filter	5.92						

			Authorization for repairs						labor	360.00
no.	sub. rprs.	Amt.							parts	42.58
			Customer sign.						acces	
			Warranty statement				Acct	Chrg	Cost	g.o. gr.	
	total								subl. rep.	
	access.		Gals. Gas @			☐ cash			tax	
			Qts. Oil @			☐ chrg				
			Lbs. Grease @			☐ intr				
	total acc		Total			By			tot.	402.58

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Exercise C (Continued) Part XXVI

Something on which to place food and from which to eat the main course of a meal.

(2) There is a lot of plate glass in this car.

Large layers of glass pressed and cemented together by a layer of plastic or resin for safety. A soda-lime-silica glass.

(3) The pilot was protected by armour plate.

A sheet of metal that bullets do not penetrate.

(4) Slide the buttons through the holes of the switch plate.

A part of the battery of the model V8 engine.

Exercise D: Students are to write a letter ordering parts from the J. C. Whitney Automotive Parts & Accessories book.

5 Air Cleaners 14" diameter regular 3 1/8" high for 4 bbl. carb. w/single stud mount 73-082921 @ $10.95

3 Air Cleaners 14" diameter for single carb. mani. only for 2 bbl. carb. w/2 5/8" neck stud mount 73-1039F @ $12.95.

1 Volt. regulator, heavy duty, Rambler 71-76 13-1947 W @ $11.98

3 Heavy Duty Alternators 72-76 Chrysler 13-1932Y @ 45.95

2 Heavy Duty Alternators 65-75 Ford Galaxie 13-1703 T @ $42.95

5 each battery cables std. guage, 12 volt, post-type, 13 1/2" 45-0999P @ $1.49; 19" 45-0342T @ $1.69; 27" 45-0344R @ $1.99; 58" 45-0349Y @ $3.29.

XXVII. Ordering parts; vocabulary improvement, langauge identification.

Exercise A: Students are to order from J.C. Whitney & Co. Automobile Parts and Accessories.

Exercise A (Continued) Part XXVII.

1 camshaft, Amer. Motors, 8 Cyl. 66-75, 390-37-6393 P @ $34.98.

1 Camshaft, Buick Special, 8 Cyl. 68-75, 350 37-6394Y $31.98

1 Camshaft, Ford Falcon, 6 Cyl. 60-75 55-0914W $27.98

6 Intake valves, Kaiser Fraser, 46-55 55-1424N @ $2.69 each.

6 Exhaust valves, Kaiser Fraser, 46-55 55-1428W @ $2.99 each.

3 Engine Gasket sets, Chrysler V8, 58-77, 318 engine 37-6655B @ $14.98.

Exercise B: Write the definition of the underlined word in each sentence.

(1) How did you pan for gold?

Washing sediment in a shallow container to separate gold from dirt and gravel.

(2) She baked a batch of cookies in the pan.

A shallow container, usually metal for baking cookies.

(3) He wanted to pan the camera.

Moving the camera to shorten a panorama.

(4) The oil pan needed cleaning.

Part of the car's engine which holds the oil to be pumped.

(5) The critic intended to pan the show.

To criticize severely.

(6) He screwed the plug into the pan.

A part to fill a hole.

(7) The old plug has pulled his last cart.

Old horse.

(8) He was chewing his plug with brown saliva dripping from

Exercise B (Continued) Part XXVII

his mouth.

A piece of chewing tobacco.

(9) His plug looked like it caught a lot of fish.

Fishing lure.

(10) He set the gap of each plug and screwed them into the block.

Spark plug for an engine.

Exercise C: Identify each underlined passage by writing one of the terms "literal" or "figurative" in each blank.

(1) He jumped into the car and roared away like he was shot from a cannon. figurative.

(2) The 318 V8 is known as a top engine produced by Chrysler, though not as powerful as other larger engines. literal

(3) He had recently increased the compression by grinding the the cylinder heads and enlarging the bore; it is a different 318 now. literal

(4) He added a special exhaust system, and the engine roared like a lion. figurative

(5) As he raced on the dirt track, dust swirled into currents and rose into the air. literal

XXVIII. Recognition of different definitions of a word; letter punctuation.

Exercise A: Write the definition of each underlined word.

(1) He did not mean to exhaust his funds, trying to fix-up his car. Spend all of his money.

(2) Smoke rose from the exhaust pipes of the factory. Pipes through which smoke and gases escape into the air.

Exercise A (Continued) Part XXVIII

(3) What does the exhaust manifold do?

Smoke and gases formed in the cylinders escape through this.

(4) The order was to rotate three hundred men in the overseas program. To replace.

(5) The farmer would rotate his cotton, maize, and sudan each year. Follow a pattern of succession.

(6) How does gasoline cause a crankshaft to rotate?

To turn.

Exercise B: Punctuate the following business letter.

1281 Liner St.
Somner, Texas 83210
January 31, 1978

Jack L. Patton, Mgr.
Gold Auto Parts Co.
2348 Mikel St.
El Baco, Texas 91201

Dear Sir:

Please bill us later for this order as follows:

V8 318 Chrysler '75 -- 2 sets intake and exhaust manifold gaskets 7 X 2312; 4 sets exhaust valves 2L 5235; 2 rocker arms IT 4823.

6 Cyl. Chevrolet '73 -- 1 set valves, intake 1C 2401; 1 set distributor kit 2L 8901.

Yours truly,
T. O. Clode

Exercise C: Write the definition of each underlined word.

(1) The minister told them they could repeat after him, "With this ring". A band placed on the finger to signify marriage.

(2) The telephone had a soft ring. A sound made by a bell.

(3) He used a bracket in the sentence. A sign that encloses a word or words.

(4) A strong bracket supports the bookcase.
A brace to help bear the weight of a shelf and objects on the shelf.

(5) He wanted to ring the pistons to increase power and prevent oil losses. The act of replacing parts that encircle each piston with contact against cylinder walls.

(6) His shots formed a bracket on the target. The target being in between two shots.

XXIX. Correct a business letter; students read and change the action of a story; interpretation of an ad.

Exercise A: Correct the mistakes in the following business letter.

See next page for letter.

Exercise A (Continued) Part XXIX

2819 58th St
Templare, Tex. 72305

January 30, 1978

Parish T. Treet, Mgr.
Accord Parts Co.
Masters, Texas 53218

Dear Sir:

In October of last year we ordered carburetor and valve kits from your company. We would like to have you trace that order and send all of the parts immediately. We know we mailed this order to your company; we have a copy of the order on file.

Yours sincerely,

P. S. Past, Parts Mgr.

Exercise B: Refer to Student Exercise Manual

Exercise C: Write the abbreviations into words and define each descriptive term.

Ply. - Plymouth Wgn. - Wagon Plymouth Station Wagon Car AM-FM - a radio with two frequency bands - a radio that can get two types of radio stations. FM one type has limited range and clearer delivery. Pwr & Air - Power steering and air conditioning. low mi. - low mileage. cruise - cruise control. pwr. windows - power windows--they are raised or lowered by electric

Exercise C (Continued) Part XXIX

power. Dr. lks. - door locks. Cream Puff - look like new.

???? - not stating the price in the ad.

XXX. Refer to Student Exercise Manual

Exercise A: What the student would do, if shopping for a car.

Exercise B: Reading assignment - script changes possible on the car trading script.

Exercise C: Write the definition of each underlined word.

(1) A shaft of light came pouring through the window. A ray or beam of light.

(2) The shaft of the hammer was broken. The part of the hammer held by the one using it.

(3) The propellor shaft is part of the power train. The part of a car or truck connected to the transmission and the differential by universal joints.

(4) The shaft of the spear was into the target. The part back of the point of the spear.

(5) The tension was mounting before the game. Excitement, strain, suspense.

(6) Measure the tension on that fan belt. The amount the fan belt is stretched.

(7) The tension increased as he wound the propellor of the rubber powered model airplane. The stretching or lengthening.

(8) One could feel the tension as the angry pair glared at each other. Emotional strain; strain of a relationship.

XXXI. Tests

Exercise A: Individualized Test of reading.

Each student reads the words from the Student Exercise Manual. Teacher, with an identical copy, places student's name on the copy and underlines each word mispronounced or not pronounced at all. Student is graded according to the number correctly pronounced.

Exercise B: Test on Engine Systems

(1) Write the parts of the ignition system from the list given.
Answer: battery, coil, ground, spark plugs, distributor, ignition switch.

(2) Name the parts of the fuel system from the list given.
Answer: carburetor, air cleaner, fuel pump, fuel pump, fuel tank, intake manifold.

(3) Name the parts of the lubricating system from the list given.
Answer: rocker arms, rocker arm shafts, oil pan, crankshaft, connecting rods, cylinder walls, oil filter, oil pump, push rods, floating oil intake, main bearings, camshaft bearings.

Exercise C: Students are to compose a business letter. Refer to Student Exercise Manual for the content of the letter.

MATHEMATICS CORRELATED WITH THE VISIBLE V8 ENGINE

Since students vary in their mathematical progress, this project will attempt to provide problems that will increase in difficulty for each assignment. The teacher decides how many problems are assigned to a student in an assignment, as well as deciding upon what problems a student is to solve. Example: One student may be assigned the first five problems. (1) 1 + 1 = ___; (2) 1 + 2 = ___; (3) 2 + 1 = ___; (4) 3 + 1 = ___; (5) 1 + 3 = ___. A different student may be assigned the following: (1) 32 + 28 = ___; (2) 14 + 17 = ___; (3) 59 + 36 = ___; (4) 48 + 27 = ___; (5) 82 + 16 = ___; (6) 78 + 13 = ___; (7) 56 + 39 = ___; (8) 48 + 26 ___.

All students participating in this project must become familiar with the names of the model parts, have ability to read and interpret the assembly steps in the Instruction Booklet , and ability to interpret diagrams of the Assembly Manual. For those students, who are not resourced for English or Language Arts, their ability to read and comprehend should enable them to expand their vocabulary and interpret the instructions with limited time allotments. Students who are resourced for English and/or Reading and Language Arts should have ample reinforcement from the assignments in those subjects to meet the vocabulary, instructional reading and diagram interpretation requirements for this mathematics correlation of the project.

1st DAY

OBJECTIVES:

1. To be able to count the nuts, screws, and rivets taken from the packet of the Visible V8 Engine Kit with 80 per cent accuracy in drill.
2. To be able to compute one digit addition with 80 per cent accuracy in drill.
3. To be able to compute 2 digits plus 1 digit with 80 per cent accuracy in drill.
4. To be able to compute 3 digits plus 1 to 3 digits without carrying and with carrying at 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Teacher opens one package and students count the rivets, noticing rivets are without threads and record; count the short screws and record; count the long screws and record; and count the nuts and record.
2. Teacher assigns place values to the objects as follows: nuts in the ones place, short screws in the tens place, long screws in the hundreds place, and rivets in the thousands place.

   Assignment: Students count the nuts through the ones and add a short screw whenever ten in reached. Ex. 1 through 9 are nuts, 10 count a short screw, 11 through 19 count nuts, 20 add another short screw. Students count in the conventional way. Only when 10, 20, 30, etc. are reached do they put a short screw with the nuts counted.
3. Refer to Part I, Student Math Exercise Manual, Exercises A, B, C,

1st DAY (Continued)

D, E, F, for drills with single digit addition, two digit plus one digit addition, two digit plus two digit addition; three digit plus one digit; three digit plus two digit; and three digit plus two digit plus one digit problems.

2nd DAY

OBJECTIVES:

1. To be able to perform counting drills with 80 per cent accuracy.
2. To be able to perform addition in drill with 80 per cent accuracy.
3. To be able to identify numerals in numeral recognition card drill with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Students use rivets, long screws, short screws, and nuts with place value of thousand for rivets, hundreds for long screws, tens for short screws, and ones for nuts. Refer to Part II, Exercise A in Student Math Exercise Manual for assignment.
2. Refer to Part II Exercise B of Student Math Exercise Manual, 2nd Day.
3. Use teacher made numeral cards of 20 selections of one through 10,000. Teacher selects card for individual student ability.

3rd DAY

OBJECTIVES:

1. To be able to count to one hundred by using nuts, short screws, and one long screw with 80 per cent accuracy.
2. To be able to add using nuts, short screws, and one long screw with 80 per cent accuracy.

3rd DAY (Continued)

3. To be able to perform numeral recognition in drill with 80 per cent accuracy.

TASK ANALYSIS:

1. Students count to one hundred by using 9 nuts, replacing the nine by a short screw when ten, twenty, thirty ... to 90 is reached then the 9 short screws and 9 nuts are replaced by the one long screw.
2. Refer to Part III, Exercises A and B, Student Math Exercise Manual.
3. Use numeral recognition cards to 200.

4th DAY

OBJECTIVES:

1. To be able to count to two hundred, using nuts, short screws, and two long screws with 80 per cent accuracy.
2. To be able to add using nuts, short screws, and four long screws with 80 per cent accuracy in drill.
3. To be able to perform numeral recognition in drill with 80 per cent accuracy.

TASK ANALYSIS:

1. Students count by using nine nuts, nine short screws, and two long screws. Students reuse the nine nuts in the ones column as they are replaced by a short screw; the nine short screws are reused as they are replaced by a long screw.
2. Teacher gives problems orally for students to record and add. Refer to Part IV, Exercise AA Teacher Math Exercise Manual.
3. Use numeral recognition cards to three hundred. Cards are not in proper sequence.

5th DAY

OBJECTIVES:

1. To be able to count to three hundred with 80 per cent accuracy in drill.
2. To be able to add problems involving one to three digits with 80 per cent accuracy in drill.
3. To be able to perform numeral recognition drill with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Students use nine nuts for ones, nine short screws for ten through 90, and three long screws for 100 through 300.
2. Students originate five addition problems each on paper and place their names on their paper. Teacher distributes these problems to other students to solve.
3. Students are drilled with numeral recognition cards to five hundred. Cards are not in a sequential order and selections from the five hundred cards may be used i.e. only twenty-five or fifty cards selected from five hundred may be used. Students missing certain numerals are to have their names entered on the back of the card in pencil.

6th DAY

OBJECTIVES:

1. To be able to count to 750 with 80 per cent accuracy in drill.
2. To be able to add problems involving one to four digits with 80 per cent accuracy in drill.
3. To be able to perform numeral recognition drills with 80 per cent accuracy.

6th DAY (Continued)

TASK ANALYSIS:

1. Students use 9 nuts, 9 short screws, and 7 long screws in counting drill. Students successfully completing yesterday's counting drill may begin at 300. Those with difficulty are to begin at least ten below the numeral of difficulty.
2. Refer to Student Math Exercise Manual Part IV, Exercise A, for addition problems.
3. Use numeral recognition cards to one thousand.

7th DAY

OBJECTIVES:

1. To be able to count to one thousand with 80 per cent accuracy in drill.
2. To be able to compute problems of four digits and including three, two, and one digits.
3. Students are drilled with numeral recognition cards with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Students begin where they successfully completed their previous count and continue to one thousand. Students may write their count without using the nuts, screws, and rivets, if they so desire.
2. Refer to Student Math Exercise Manual, Part V, Exercise A.
3. Students are drilled with numeral recognition cards including the 10,000's. Refer to Chilton's Auto Repair Manual 1976, page C5, column entitled "Horsepower @ rpm; have students read portions of the column aloud; have student discussion of "horsepower" and "rpm".

8th DAY

OBJECTIVES:

1. To be able to identify the place value of numerals including decimals with 80 per cent accuracy in drill.
2. To be able to develop applied math skills with 80 per cent accuracy in drill.
3. To be able to compute addition problems using the hundredths place value with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Explain the procedure of locating information in Chilton's Auto Repair Manual 1976. Assign the location of "Capacities" chart for the 1970 Pontiac Ventura, have students read and discuss the "capacities" chart. Include the following page or pages on "capacities" only.
2. Teacher instructs the students in computing with the "Time/Dollar Conversion Table". Refer to Student Math Exercise Manual, Part V, Exercise B.
3. Refer to Part V, Teacher Math Exercise Manual, Exercise CC for addition with decimals problems for chalkboard drill.

9th DAY

OBJECTIVES:

1. To be able to identify letter numeral combinations with 70 per cent accuracy in drill.
2. To be able to identify numerals in the thousandths position with 80 per cent accuracy in drill.
3. To be able to perform addition problems using decimals including

9th DAY (Continued)

thousandths with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Teacher demonstrates location and interpretation of Vehicle Identification Number in the Crash Estimating Guide, April, 1975, Vol. 7, No. 4, for Buick Cadillac, Chevrolet, Oldsmobile, and Pontiac. Teacher assigns various Vehicle Identification Numbers; refer to Part V, Exercise C, Student Math Exercise Manual. Students are to copy codes on small index cards for "Parts House" demonstration.
2. Students locate the bore and stroke for the following: Dodge Dart 1969, 6 cylinder 225 cubic inches displacement; Dodge Volare 1976, 8 cylinder, 360 cubic inches displacement; Dodge Challenger 1973, 8 cylinder, 318 cubic inch displacement; Plymouth Valiant 1974, 6 cylinder, 225 cubic inch displacement, in the Chilton's Auto Repair Manual 1976.
3. Refer to Student Math Exercise Manual, Part VI, Exercise A for problems using the dealer's billing sheet. Teacher explains the use of the dealer's billing sheet prior to assignment of these problems.
4. Teacher presents points and spark plug gap tool for student examination.

10th DAY

OBJECTIVES:

1. To be able to identify letter numeral combinations with 70 per cent accuracy in drill.
2. To be able to compute addition problems involving decimals with 80 per cent accuracy in drill.

10th DAY (Continued)

3. To be able to identify thousandths that are orally expressed with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Student is shown code recognition cards in drill, with brief showings of a card and an oral response. Ex. 6XP2401 is expressed as: six X P two four zero one. Flash card letters should be at various locations in the order.
2. Refer to Student Math Exercise Manual, Part VI, Exercise B, for problems requiring the dealer billing sheet and J. C. Whitney & Co. Automotive Parts & Accessories catalog no. 364B.
3. Teacher calls out the following: four thousandths, eighteen thousandths, twenty thousandths, seven thousandths, fifty-two thousandths. Students write the answers with decimals and numerals.
4. Teacher calls out the amounts on the points setting tool as expressed above, and students locate the amount indicated on the points setting tool.

11th DAY

OBJECTIVES:

1. To be able to compute income using the "Time/Dollar Conversion Table" with 80 per cent accuracy in drill.
2. To be able to originate addition problems involving the use of decimals with 80 per cent accomplishment in the number of problems assigned within a given time limit.
3. To be able to locate and record required information assigned from a parts book with 80 per cent accuracy in drill.

11th DAY (Continued)

TASK ANALYSIS:

1. Teacher selects various times and wages from the "Time/Dollar Conversion Table" and students locate the dollar amount. Example: Time 1.7; Wage $10.00; Total Wage $17.00. Refer to Part VI, Exercise C, of Student Math Exercise Manual.
2. Students are assigned the following: originate five problems using decimals, adding tenths together; originate five problems adding tenths and hundredths together; originate five problems adding tenths, hundredths, and thousandths together. Teacher instructs the students not to solve their own problems.
3. Students are assigned the following to locate in the J. C. Whitney & Co., Automotive Parts & Accessories catalog:
   Oil pump filter assembly for a 1976 Volkswagen Beetle; heavy duty oil pump for a 1976 Plymouth Valiant 6 cylinder; one set of camshaft bearings for a 1973 Dodge Dart V8; standard replacement coil for a 1974 Dodge DART V8. Students are to record the stock number, part name, for what car, engine cylinders, and the price. Students are to total the prices.

12th DAY

OBJECTIVES:

1. To be able to develop a concept of fractions by length in fractions and degrees with 80 per cent accuracy in drills.
2. To be able to convert decimals into fractions with 80 per cent accuracy in drill.
3. To be able to identify numeral letter codes on cards in drill with

80 per cent accuracy.

TASK ANALYSIS:

1. Teacher has students measure distances with a ruler as follows: 1/2"; 1/4"; 3/4"; 7/8"; 2 1/8"; 2 5/8"; 4 3/8"; 11 1/4";
2. Refer to Part VII, Exercise A, Student Math Exercise Manual.
3. Refer to Part VII, Exercise B, Student Math Exercise Manual.
4. Teacher drills students with code recognition cards by briefly showing each card, and student writing the code without orally expressing the code.

13th DAY

NOTE: Students not participating in the project for Reading and Language Arts are to assemble the model according to the lesson plans for Reading and Language Arts 13th day.

Students participating in the Reading and Language Arts project will assemble the model during that period and perform the following tasks for this Math period.

OBJECTIVES:

1. To be able to use the tables of the 5% Texas Sales Tax with 80 per cent accuracy in drill.
2. To be able to use the Time/Dollar Conversion Table with 100 per cent accuracy on assignment.
3. To be able to locate, record, and add amounts using decimals with 80 per cent accuracy on assignment.

TASK ANALYSIS:

1. Teacher reviews students over the columns of the 5% Sales Tax card.

13th DAY (Continued)

Teacher also explains the necessary computations required for larger purchases as shown on the reverse side of the card. Teacher assigns different amounts to each student to determine the tax, add the total of tax to the amount, and add the totals of all of the problems assigned.

2. Teacher assigns different times and wages, including fifty cents added to hour wages as $6.50, $13.50, etc.
3. Refer to Part VII, Exercise C, of Student Math Exercise Manual for problems in J. C. Whitney Automobile Parts & Accessories.

14th DAY

OBJECTIVES:

1. To be able to locate and total parts involving codes and decimals with 80 per cent accuracy on assignment.
2. To be able to locate and arrive at estimated fair market prices for cars with 80 per cent accuracy of assignment.

TASK ANALYSIS:

1. Refer to Student Math Exercise Manual, Part VIII, Exercise A. Problems are used for role playing involving work in a parts house.
2. Refer to Student Math Exercise Manual, Part VIII, Exercise B. Problems require the use of the Car and Truck Appraisals book.

15th DAY

OBJECTIVES:

1. To be able to enter and compute problems on the dealers billing sheet with 80 per cent accuracy of assignment.
2. To be able to transform word numbers into numerals; decimal word

15th DAY (Continued)

numbers into numerals; then fractions, with 80 per cent accuracy of assignment.

3. To be able to write checks with accuracy of words and numerals.

TASK ANALYSIS:

1. Refer to Student Math Exercise Manual, Part IX, Exercise A. The J. C. Whitney & Co., Automotive Parts & Accessories catalog is also used.
2. Refer to Part IX, Exercise B, Student Math Exercise Manual.
3. Teacher hands example blank checks and discusses the use of checks and how to write checks. Teacher assigns different check amount to each student.

16th DAY

OBJECTIVES:

1. To be able to review numeral identification and code identification cards with 80 per cent accuracy in drill.
2. To be able to complete dealers billing sheets with 80 per cent accuracy in drill.
3. To be able to locate estimates of prices of used cars with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Use numeral and code recognition cards for oral responses in drill. Teacher shows card briefly, removes card and students give the code aloud.
2. Refer to Student Math Exercise Manual Part X Exercise A.
3. Refer to Student Math Exercise Manual, Part X, Exercise B. Also used

16th DAY (Continued)

is the Car and Truck Appraisals book.

17th DAY

OBJECTIVES:

1. To be able to transform written words into numeral and fractions with 80 per cent accuracy on a test.
2. To be able to enter and compute problems on dealers billing sheets with 80 per cent accuracy on a test.
3. To be able to compute addition problems requiring information of used car sales with 80 per cent accuracy on a test.

TASK ANALYSIS:

1. Refer to Part XI, Test Exercise A, Teacher Math Exercise Manual.
2. Refer to Part XI, Test Exercise B, Teacher Math Exercise Manual.
3. Refer to Part XI, Test Exercise C, Teacher Math Exercise Manual.

18th DAY

NOTE: Students not participating in the project for Reading and Language Arts are to assemble their model according to the 18th day lesson plans of Reading and Language Arts.

Students who assemble their models at the Reading and Language Arts period are to participate in the following lesson plans during this math period.

OBJECTIVES:

1. To be able to subtract using one digit numerals with 80 per cent accuracy in drill.
2. To be able to subtract using two and one digit numerals without borrowing with 80 per cent accuracy in drill.

18th DAY (Continued)

3. To be able to subtract using one, two, and three digits without borrowing with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Students are given nine nuts to remove different amounts and recording the problems as: 9 nuts minus 3 nuts leaves 6 nuts, etc.
2. Students are given the information that a short screw stands for ten and a nut is one. Students are given nine short screws and nine nuts. Students are to originate subtraction problems without borrowing.
3. Students are given 9 long screws, 9 short screws, and 9 nuts with long screws representing hundreds, short screws representing tens, and nuts representing ones.

   Refer to Part XII, Exercise A, Student Math Exercise Manual.

19th DAY

OBJECTIVES:

1. To be able to subtract without borrowing one, two and three digits with 80 per cent accuracy in drill.
2. To be able to subtract one digit from two digits by borrowing with 80 per cent accuracy in drill.
3. To be able to subtract one digit from three digits by borrowing with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Students use long screws, short screws, and nuts for hundreds, tens, and ones respectively. Refer to Part XII, Exercise B, Student Math Exercise Manual.

19th DAY (Continued)

2. Refer to Exercise C, Part XII, Student Math Exercise Manual for problems of two digits minus one digit including borrowing.
3. Refer to Exercise D, Part XII, Student Math Exercise Manual for problems of borrowing with three digits minus one digit.

20th DAY

OBJECTIVES:

1. To be able to subtract two digits from three digits by borrowing with 80 per cent accuracy in drill.
2. To be able to subtract two digits from four digits by borrowing with 70 per cent accuracy in drill.
3. To be able to subtract three digits from four digits by borrowing with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Students use long screws, short screws, and nuts to solve subtraction problems. Refer to Part XIII, Exercise A, Student Math Exercise Manual.

21st DAY

OBJECTIVES:

1. To be able to subtract four digits from four digits with 80 per cent accuracy in drill.
2. To be able to subtract four digits from four digits by borrowing with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Part XIV, Exercise A, Student Exercise Manual and Car and Truck Appraisals for subtraction of four digits from four digits with

21st DAY (Continued)

and without borrowing.

2. Refer to *Car and Truck Appraisals* and originate problems.

22nd DAY

OBJECTIVES:

1. To be able to review problems of subtraction involving one to four digits without borrowing with 80 per cent accuracy in drill.
2. To be able to review problems of one to four digits that include borrowing with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Part XIV, Exercise B, *Student Math Exercise Manual* for review problems.
2. Refer to Part XIV, Exercise C, *Student Math Exercise Manual* for review problems.

23rd DAY

NOTE: Students not participating in the Reading and Language Arts project are to assemble their models during this math period according to the lesson plans of the Reading and Language Arts project.

Other students assemble their models during the Reading and Language Arts period. This math period, these students are assigned:

OBJECTIVES:

1. To be able to compute one and two digit addition problems by using a calculator with 80 per cent accuracy in drill.
2. To be able to compute a series of one, two, and three digit problems using a calculator, with 70 per cent accuracy in drill.

23rd DAY (Continued)

3. To be able to compute subtraction problems of one and two digits, using a calculator, with 70 per cent accuracy in drill.
4. To be able to compute subtraction problems of three and four digits, using a calculator, with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Part XV, Exercise A, B, and C of Student Math Exercise Manual for problems to be worked by the calculator.

24th DAY

OBJECTIVES:

1. To be able to add problems involving decimals with 70 per cent accuracy on drill.
2. To be able to subtract problems involving decimals with 70 per cent accuracy on drill.

TASK ANALYSIS:

1. Refer to Part XVI, Exercise A, Student Math Exercise Manual, for review of addition problems using decimals.
2. Refer to Part XVI, Exercise B, Student Math Exercise Manual for subtraction problems.

25th DAY

OBJECTIVES:

1. To be able to add decimal problems using the calculator with 70 per cent accuracy in drill.
2. To be able to subtract decimal problems using the calculator with 70 per cent accuracy in drill.

25th DAY (Continued)

TASK ANALYSIS:

1. Refer to Part XVII, Exercise A, Student Math Exercise Manual for addition problems using the calculator.
2. Refer to Part XVII, Exercise B, Student Math Exercise Manual for subtraction problems using the calculator.

26th DAY

OBJECTIVES:

1. To be able to solve problems not grouped according to addition or subtraction with 80 per cent accuracy in drill.
2. To be able to solve problems involving adding and subtracting within each problem with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Part XVIII, Exercise A, Student Math Exercise Manual for a mixture of addition and subtraction problems.
2. Refer to Part XVIII, Exercise BB, Teacher Math Exercise Manual for problems requiring both adding and subtracting functions on chalkboard drill.

27th DAY

OBJECTIVES:

1. To be able to participate on a test of addition and subtraction problems with 70 per cent accuracy.

TASK ANALYSIS:

1. Refer to Part XIX, Exercise AA, Teacher Math Exercise Manual tests over addition and subtraction.

28th DAY

NOTE: Students assemble their model during the math period who are not resourced for Reading and Language Arts. Teacher uses lesson plans for 28th day of Reading and Language Arts.

Students participating in the Reading Language Arts project are to participate in the following tasks during the math period.

OBJECTIVES:

1. To be able to solve decimal problems with addition and subtraction within each problem.
2. To be able to originate problems involving addition and subtraction within each problem.

TASK ANALYSIS:

1. Refer to Part XIX, Exercise A, Student Math Exercise Manual and Car and Truck Appraisals book for problems involving addition and subtraction combined.
2. Students are to originate five problems that require addition and subtraction within each problem.

29th DAY

OBJECTIVES:

1. To be able to add fractions with the same denominator with 80 per cent accuracy in drill.
2. To be able to add fractions with different denominators with 70 per cent accuracy in drill.
3. To be able to subtract fractions with the same denominator with 80 per cent accuracy in drill.

29th DAY (Continued)

TASK ANALYSIS:

1. Refer to Part XIX, Exercise B, Student Math Exercise Manual for addition problems with the same denominator.
2. Refer to Part XIX, Exercise C, Student Math Exercise Manual for addition problems with different denominators.
3. Refer to Part XIX, Exercise DD, Teacher Math Exercise Manual for subtracting fractions with the same denominator, use chalkboard drill.

30th DAY

OBJECTIVES:

1. To be able to compute subtraction problems with mixed denominators with 70 per cent accuracy in drill.
2. To be able to compute problems by adding fractions with different denominators and subtracting fractions with the same denominators within the same problems with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Part XX, Exercise AA, Teacher Math Exercise Manual and Exercises A & B, Student Exercise Manual for subtracting problems with differing denominators.
2. Refer to Part XX, Exercise BB, Teacher Math Exercise Manual for adding and subtraction combination problems.

31st DAY

OBJECTIVES:

1. To be able to solve addition, subtraction, fraction problems with 70 per cent accuracy in drill.
2. To be able to solve problems involving mixed denominators with 70

31st DAY (Continued)

per cent accuracy in drill.

2. To be able to solve problems involving mixed denominators with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to Part XXI, Exercise A & B Student Math Exercise Manual for review of fractions.

32nd DAY

OBJECTIVES:

1. To be able to compute the addition and subtraction fraction problems with 80 per cent accuracy on a test.

TASK ANALYSIS:

1. Refer to Exercise AA, Part XXI, Teacher Math Exercise Manual for Test material.

33rd DAY

NOTE: Students assemble V8 Engine model who are not participating in the Reading and Language Arts project. Teacher uses lesson plans for the 33rd day of the Reading and Language Arts program. Students who assemble their model during the Reading and Language Arts period are to participate in the following:

OBJECTIVES:

1. To be able to solve addition and subtraction problems involving decimals, and using the calculator, with 80 per cent accuracy.
2. To be able to solve problems involving fractions adding and subtracting with mixed denominators.

33rd DAY (Continued)

TASK ANALYSIS:

1. Refer to Part XXI, Exercise A, Student Math Exercise Manual for problems to be used with the calculator.
2. Refer to Part XXII, Exercise B, Student Math Exercise Manual for problems with mixed denominators.

34th DAY

OBJECTIVES:

1. To be able to solve simple multiplication problems with 60 per cent accuracy in timed drill.
2. To be able to solve two digit multiplied by single digit problems with 80 per cent accuracy in drill.
3. To be able to solve one and two digits multiplied by ten, one hundred, one thousand, with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Students are assigned the learning of multiplication facts from 0 X 0 through 9 X 9, starting with 0 X 0 through 9 X 0 and gradually working up 0 X 9 through 9 X 9, according to the ability of the individual student; have chalkboard drill.
2. Refer to Part XXIII, Exercise A, Student Math Exercise Manual problems of two digits multiplied by one digit.
3. Teacher demonstrates the easy way of multiplying by ten, one hundred, and one thousand on the chalkboard as follows: 1 X 10 = 10; 2 X 10 = 20; 3 X 10 = 30. Teacher points out how the student only has to add a zero to what is being multiplied. Teacher shows how one only adds two zeroes to the digit when it is multiplied by one

hundred. Ex. 1 X 100 = 100; 2 X 100 = 200; 3 X 100 = 300. Teacher demonstrates the same procedure when multiplying by one thousand. Teacher has students go to the chalkboard and teacher calls out problems of one digit multiplied by 10, 100, or 1000.

Teacher demonstrates the same procedure when multiplying two digits by ten, one hundred, or one thousand.

35th DAY

OBJECTIVES:

1. To be able to recite the multiplication table of zero through ten with 60 per cent accuracy in timed drill.
2. To be able to solve two digits multiplied by two digits problems with 80 per cent accuracy in drill.
3. To be able to originate two digits multiplied by one digit problems and two digits multiplied by two digits problems with 80 per cent of the assigned total of problems.

TASK ANALYSIS:

1. Students recite the multiplication table of zero through ten individually and are timed.
2. Refer to Part XXIII, Exercise B, Student Math Exercise Manual for assigned multiplications of two digits by two digits.
3. Students are assigned the origination of ten problems of two digits multiplied by one digit, and ten problems of two digits multiplied by two digits problems. The problems are to given orally to the cassette recorder. Teacher types each problem and recites each problem on a tape for student to hear, read, and solve tomorrow.

36th DAY

OBJECTIVES:

1. To be able to read, hear, and solve multiplication problems with 70 per cent accuracy on assignment.
2. To be able to recite the multiplication tables of 10 X 0 through 10 X 10 with 80 per cent accuracy in drill.
3. To be able to solve problems of three digits multiplied by one digit with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Refer to cassette tape and Part XXIII, Exercise CC Teacher Math Exercise Manual for problems on cassette tape alongwith answers in the manual.
2. Students recite multiplication facts from 0 to 10 on an individually timed drill. Teacher adjusts the required amount according to individual student ability.
3. Refer to Part XXIII, Exercise DD, Teacher Math Exercise Manual for chalkboard drill problems.

37th DAY

OBJECTIVES:

1. To be able to recite the multiplication facts of 0 to 10 with 80 per cent accuracy in a timed drill.
2. To be able to operate the calculator to solve 3 digit times 1 digit problems in multiplication with 90 per cent accuracy in drill.
3. To be able to solve three digit times two digit problems with 80 per cent accuracy on a drill.

37th DAY (Continued)

TASK ANALYSIS:

1. Individual students are required to recite more or less than the 0 to 10 facts, according to their ability on timed drill.
2. Refer to Part XXIV, Exercise A, Student Math Exercise Manual for problems.
3. Refer to Part XXIV, Exercise AA, Teacher Exercise Manual then Exercise B, Student Math Exercise Manual.

38th DAY

NOTE: Students not assembling the V8 Engine Model during their Reading Language Arts period are to assemble their model during this Math period, using the lesson plans of Reading and Language Arts. Other students are to follow the Math lesson plans.

OBJECTIVES:

1. To be able to recite the table of multiplication to twelve times twelve with 70 per cent accuracy in drill.
2. To be able to multiply one digit numerals by decimal numerals in the tenths place with 70 per cent accuracy on drill.
3. To be able to multiply two digit numerals by decimal numerals in the tenths place with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Students are individually tested in timed recitations with 70 per cent accuracy on drill.
2. Refer to Part XXIV, Exercise C, Student Math Exercise Manual for one digit numerals multiplied by decimal numerals in the tenths position.
3. Refer to Part XXIV, Exercise BB, Teacher Exercise Manual, then

38th DAY (Continued)

Exercise D, Student Math Exercise Manual for multiplication of two digit numerals by decimal numerals in the tenths position.

39th DAY

OBJECTIVES:

1. To be able to recite the table of multiplication to 12 times 12 with 70 per cent accuracy in drill.
2. To be able to multiply two digit numerals by decimal numerals in the tenths place with 70 per cent accuracy in drill.
3. To be able to multiply three digit numerals by decimal numerals by decimal numerals in the tenths place with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Students are timed as they recite the multiplication table on an individual basis.
2. Refer to Part XXV, Exercise A, Student Math Exercise Manual for multiplication of two digit numerals by numerals in the tenths place.
3. Refer to Part XXV, Exercise AA, Teacher Exercise Manual then Exercise B, Student Math Exercise Manual for three digit multiplication by numerals in the tenths place.

40th DAY

OBJECTIVES:

1. To be able to recite the multiplication table to 12 times 12 on a timed drill with 80 per cent accuracy.
2. To be able to multiply three digit numerals by numerals in the tenths place with 80 per cent accuracy in drill.

40th DAY (Continued)

3. To be able to multiply four digit numerals by numerals in the tenths place with 80 per cent accuracy in drill.

TASK ANALYSIS:

1. Teacher times students individually, gradually increasing the multiplication table to the 12 X 12 fact, for individual students.
2. Refer to Part XXV, Exercise C, Student Math Exercise Manual.
3. Refer to Part XXV, Exercise D, Student Math Exercise Manual.

41st DAY

OBJECTIVES:

1. To be able to recite the multiplication table to 12 times 12 on a timed drill with 80 per cent accuracy.
2. To be able to multiply three digit numerals by numerals in the tenths place with 90 per cent accuracy on assignment.
3. To be able to multiply four digit numerals by numerals in the tenths place with 80 per cent accuracy on assignment.

TASK ANALYSIS:

1. Teacher individualizes the timed recitations and records students' progress.
2. Refer to Part XXVI, Exercise A, Student Math Exercise Manual.
3. Refer to Part XXVI, Exercise B, Student Math Exercise Manual.

42nd DAY

OBJECTIVES:

1. To be able to solve problems of one digit times one digit with and without the decimal in the tenths place with 80 per cent accuracy on a test.

2. To be able to solve problems of two to four digits multiplied by single digits with and without decimals in the tenths place with 70 per cent accuracy on a test.
3. To be able to solve three digits times two digits problems with 70 per cent accuracy on a test.

TASK ANALYSIS:

1. Refer to Part XXVI, Exercise AA, Teacher Math Exercise Manual for test.

43rd DAY

NOTE: Students are to assemble their V8 Engine models according to the 43rd day, Reading and Language Arts lesson plans, if they do not assemble their models at a different period.

Students who assemble their V8 Engine models at a different period during the day, are to participate according to the following lesson plans.

OBJECTIVES:

1. To be able to recite the multiplication table to 12 times 12 with 80 per cent accuracy in drill.
2. To be able to solve multiplication problems of one digit times two or more digits using decimals and the tenths place with 70 per cent accuracy of assignment.
3. To be able to solve multiplication problems using two digits times two or more digits using decimals and the tenths place with 70 per cent accuracy of assignment.

43rd DAY (Continued)

TASK ANALYSIS:

1. Students are individualized according to ability to recite the multiplication facts. Records are kept on individuals.
2. Refer to Part XXVII, Exercise A, Student Math Exercise Manual.
3. Refer to Part XXVII, Exercise AA, Teacher Math Exercise Manual then Exercise B, Student Math Exercise Manual. Chalkboard drill first.

44th DAY

OBJECTIVES:

1. To be able to recite the multiplication table to 12 X 12 with 80 per cent accuracy in drill.
2. To be able to solve multiplication problems of one digit times two or more digits, using decimals and the tenths place with 80 per cent accuracy in drill.
3. To be able to solve multiplication problems of three digits times two or more digits with one digit in the tenths place with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Individualize drill and assign objectives for individual students to reach toward 12 times 12.
2. Refer to Part XXVII, Exercise C, Student Math Exercise Manual for problems. Assign the amount of problems according to individual student ability.
3. Refer to Part XXVII, Exercise DD, Teacher Math Exercise Manual then Exercise D, Student Math Exercise Manual for problems. Assign

44th DAY (Continued)

the amount of problems according to student ability. Use chalkboard drill.

45th DAY

OBJECTIVES:

1. To be able to recite the multiplication table to 12 X 12 with 80 per cent accuracy in drill.
2. To be able to solve problems with one digit times one digit in the hundredths place with 80 per cent accuracy in drill.
3. To be able to solve problems with two or more digits times one digit in the hundredths place with 70 per cent accuracy in drill.

TASK ANALYSIS:

1. Students are individually tested to determine their ability to progress and memorize the multiplication table to 12 X 12.
2. Refer to Part XXVIII, Exercise AA, Teacher Math Exercise Manual then Exercise A, Student Math Exercise Manual. Students drill at the chalkboard.
3. Refer to Part XXVIII, Exercise BB, Teacher Math Exercise Manual then Exercise B, Student Math Exercise Manual. Students drill at the chalkboard.

46th DAY

OBJECTIVES:

1. To be able to solve problems with two or more digits times one digit in the hundredths place with 80 per cent accuracy in drill.
2. To be able to solve problems with one digit times two digits in the hundredths place with 70 per cent accuracy on assignment.

46th DAY (Continued)

3. To be able to solve problems with two or more digits times two digits in the hundredths place with 70 per cent accuracy of assignment.

TASK ANALYSIS:

1. Refer to Part XXVIII, Exercise C, *Student Math Exercise Manual.*
2. Refer to Part XXIX, Exercise AA, *Teacher Math Exercise Manual* then Exercise A, *Student Math Exercise Manual*. Students participate in chalkboard drill.
3. Refer to Part XXIX, Exercise B, *Student Math Exercise Manual*. Teacher originates problems for chalkboard drill of two digits times two digits in the hundredths place.

47th DAY

OBJECTIVES:

1. To be able to solve problems on a test that involve decimal problems of tenths and hundredths with 70 per cent accuracy.

TASK ANALYSIS:

1. Refer to Part XXX, Exercise AA, BB, and CC, *Teacher Math Exercise Manual* for tests. Teacher selects problems depending upon student ability and area covered.

48th DAY

NOTE: Students assemble model V8 Engines according to 48th Day Reading and Language Arts lesson plans, if the students do not work on this project during a Reading and Language Arts period. Those students who are participating on this project during the Reading and Language Arts or English period are to participate in teacher selections of the following lesson plans.

48th DAY (Continued)

OBJECTIVES:

1. To be able to recite multiplication facts to 12 X 12 with 80 per cent accuracy on a timed drill.
2. To be able to solve problems with one or more digits times two digits in the hundredths place with 80 per cent accuracy on assignment.
3. To be able to solve problems with one or more digits times three digits, having two of the three digits in the hundredths place with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Individualize recitations of multiplication tables.
2. Refer to Part XXX, Exercise A, Student Math Exercise Manual.
3. Refer to Part XXX, Exercise B, Student Math Exercise Manual.

49th DAY

OBJECTIVES:

1. To be able to solve problems with one or more digits times three digits, having two of the three digits in the hundredths place with 70 per cent accuracy on assignment.
2. To be able to solve problems with one or more digits times four digits, having two of the four digits in the hundredths place with 70 per cent accuracy on assignment.
3. To be able to solve problems with one or more digits times three digits and zero as a place holder, with two of the digits in the hundredths place or zero and one digit in the hundredths place, with 70 per cent accuracy on assignment.

49th DAY (Continued)

TASK ANALYSIS:

1. Refer to Part XXXI, Exercise AA, Teacher Math Exercise Manual then Exercise A, Student Math Exercise Manual. Chalkboard drill as well as seat work.
2. Refer to Part XXXI, Exercise B, Student Math Exercise Manual.
3. Refer to Part XXXI, Exercise BB, Teacher Math Exercise Manual then Exercise C, Student Math Exercise Manual. Teacher selects the number and amount of problems for each student. Students are to have chalkboard drill first.

50th DAY

OBJECTIVES:

1. To be able to recite the multiplication table with 80 per cent accuracy in drill.
2. To be able to solve problems with one or more digits times three digits and zero as a place holder; with two digits, or zero and a digit, in the hundredths place, with 80 per cent accuracy on assignment.
3. To be able to solve problems with one or more digits times three digits which are in the thousandths place with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Students individually recite the multiplication table as teacher times the student.
2. Refer to Part XXXI, Exercise CC, Teacher Math Exercise Manual then Exercise D, Student Math Exercise Manual. Students have chalkboard

drill and seat work.

3. Refer to Part XXXII, Exercise A, Student Math Exercise Manual. Teacher originates problems using three digits in the thousandths place.

51st DAY

OBJECTIVES:

1. To be able to solve problems with one or more digits times three digits in the thousandths place with 80 per cent accuracy on assignment.
2. To be able to solve problems with one or more digits times two digits and zero as a place holder in the thousandths place with 70 per cent accuracy on assignment.
3. To be able to solve problems with one or more digits times three digits and zero as a place holder in one of the thousandths places with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XXXII, Exercise B, Student Math Exercise Manual.
2. Refer to Part XXXII, Exercise AA, Teacher Math Exercise Manual then Exercise C, Student Math Exercise Manual. Students have chalkboard participation before seat work.
3. Refer to Part XXXII, Exercise BB, Teacher Math Exercise Manual then Exercise D, Student Math Exercise Manual. Students have chalkboard drill before seat work.

52nd DAY

OBJECTIVES:

1. To be able to solve problems on a test that involve decimal problems of hundredths and thousandths expressed as decimals with 80 per cent accuracy on a test.

TASK ANALYSIS:

1. Refer to Part XXXIII, Exercises AA, BB, and CC, Teacher Math Exercise Manual.

53rd DAY

NOTE: Students not assigned the Visible V8 Engine model project during a Reading and Language Arts or English period are to assemble their models according to the Reading and Language Arts lesson plans, 53rd day.

Other students are instructed according to the lesson plans for mathematics.

OBJECTIVES:

1. To be able to solve problems having two or more digits, and zero amoung the digits, times three digits in the thousandths place with a zero in the whole number place, with 70 per cent accuracy of assignment.
2. To be able to solve problems with one or more digits times four digits in the ten thousandths place with 70 per cent accuracy of assignment.
3. To be able to solve problems with two or more digits times three digits and zero as a place holder in the ten thousandths place with 70 per cent accuracy on assignment.

53rd DAY (Continued)

TASK ANALYSIS:

1. Refer to Part XXXIII, Exercise DD, Teacher Math Exercise Manual then Exercise A, Student Math Exercise Manual. Students have chalkboard drill.
2. Refer to Part XXXIII, Exercise EE, Teacher Math Exercise Manual then Exercise B, Student Math Exercise Manual. Students have chalkboard drill.
3. Refer to Part XXXIII, Exercise FF, Teacher Math Exercise Manual then Exercise C, Student Math Exercise Manual. Students have chalkboard drill.

54th DAY

OBJECTIVES:

1. To be able to originate multiplication problems of one through four digits times tenths, hundredths, and thousandths with 100 per cent accuracy of assignment.
2. To be able to originate multiplication problems of one through four digits times hundredths and thousandths using zero as a place holder in the decimal fraction with 100 per cent accuracy of assignment.

TASK ANALYSIS:

1. Students originate one unsolved problem each of one through four digits times tenths, hundredths, and thousandths for a total of twelve problems and turn them in to the teacher.
2. Students originate two unsolved problems each of one through four digits times hundredths, and thousandths, using zero as a place holder in the decimal fraction for a total of sixteen problems

54th DAY (Continued)

and turn them in to the teacher.

3. Teacher has students to the chalkboard and drill them on problems turned in by the students.

55th DAY

OBJECTIVES:

1. To be able to solve multiplication problems of three through five digits times digits of ten thousandths with zero sometimes included as a place holder in the ten thousandths with 70 per cent accuracy of assignment.
2. To be able to solve problems with two digits having a decimal times one digit expressed as a tenth with 80 per cent accuracy of assignment.
3. To be able to solve problems with three digits having a decimal times one digit expressed as a tenth, then two digits expressed as whole numbers and tenths, and two digits as hundredths with 70 per cent accuracy on the assignment.

TASK ANALYSIS:

1. Students drill at the chalkboard. Refer to Part XXXIV, Exercise AA, Teacher Math Exercise Manual then Exercise A, Student Math Exercise Manual for chalkboard drill and seat work.
2. Students drill at the chalkboard; teacher gives problems orally from Part XXXIV, Exercise BB, Teacher Math Exercise Manual and seat work of problems from Part XXXIV, Exercise B, Student Math Exercise Manual.
3. Refer to Part XXXIV, Exercise CC, Teacher Math Exercise Manual, then Exercise C, Student Math Exercise Manual for chalkboard drill

55th DAY (Continued)

and seat work.

56th DAY

OBJECTIVES:

1. To be able to solve multiplication problems with one to five digits and a decimal point expressing whole numbers and decimal fractions times one to five digits and a decimal point expressing fractions in tenths to ten thousandths with 80 per cent accuracy on assignment.
2. To be able to solve addition with multiplication problems with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Have students originate problems at the chalkboard according to Objective one, rotate students, and have student solve problems originated by others.
2. Refer to Part XXXV, Exercise AA, of Teacher Math Exercise Manual then Exercise A, Student Math Exercise Manual for chalkboard drill and seat work problems. Use role playing with the auto parts house with parts man determining prices of parts plus tax and customers writing checks.

57th DAY

OBJECTIVES:

1. To be able to solve multiplication of decimal problems with 70 per cent accuracy on a test.
2. To be able to solve multiplication with addition problems with 70 per cent accuracy on a test.

57th DAY (Continued)

TASK ANALYSIS:

1. Refer to Teacher Math Exercise Manual, Part XXXV, Exercises BB and CC for test problems.

58th DAY

NOTE: Students not assembling the V8 Engine model during a different period are to assemble this period, following instructions for the 58th Day, Reading and Language Arts lesson plans.

Other students are to be instructed according to the following lesson plans.

OBJECTIVES:

1. To be able to solve multiplication with subtraction problems with 70 per cent accuracy on assignment.
2. To be able to solve multiplication with subtraction and addition problems with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XXXVI, Exercise AA, Teacher Math Exercise Manual and Exercise A, Student Math Exercise Manual for chalkboard and seat work assignments of problems involving discounts.
2. Refer to Part XXXVI, Exercise BB, Teacher Math Exercise Manual and Exercise B, Student Math Exercise Manual for chalkboard and seat work assignments of problems involving discounts and sales taxes.

59th DAY

OBJECTIVES:

1. To be able to solve multiplication with subtraction problems with

59th DAY (Continued)

80 per cent accuracy on assignment.

2. To be able to solve multiplication with subtraction and addition problems with 80 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XXXVII, Exercise AA, Teacher Math Exercise Manual and Exercise A, Student Math Exercise Manual for chalkboard and seat work problems involving discounts and sales taxes.

60th DAY

OBJECTIVES:

1. To be able to solve problems involving multiplication and subtraction with 80 per cent accuracy on drill.
2. To be able to solve problems involving multiplication, subtraction and addition with 80 per cent accuracy on drill.

TASK ANALYSIS:

1. Refer to Teacher Math Exercise Manual, Part XXXVII, Exercise CC for drill problems.
2. Refer to Teacher Math Exercise Manual, Part XXXVII, Exercise DD for drill problems.

61st DAY

OBJECTIVES:

1. To be able to solve problems involving multiplication and subtraction with 80 per cent accuracy on assignment.
2. To be able to solve problems involving multiplication, subtraction, and addition with 80 per cent accuracy on assignment.

61st DAY (Continued)

TASK ANALYSIS:

1. Refer to Student Math Exercise Manual, Part XXXVII, Exercise C for problems involving parts from J. C. Whitney & Co. Automotive Parts & Accessories.
2. Refer to Student Math Exercise Manual, Part XXXVII, Exercise D for problems used in the "Auto Parts" Store.

62nd DAY

OBJECTIVES:

1. To be able to solve problems of multiplication and subtraction, and problems of multiplication, subtraction, and addition with 70 per cent accuracy on a test.

TASK ANALYSIS:

1. Refer to Teacher Math Exercise Manual, Part XXXVIII, Exercise AA, for test problems.

63rd DAY

NOTE: Students assemble their V8 Engine models this period, if they do not assemble at a different time period. Students assembling their models at a different time period are to be instructed from the following lesson plans.

OBJECTIVES:

1. To be able to solve multiplication, subtraction, and addition problems using the calculator with 70 per cent accuracy on drill.
2. To be able to solve multiplication subtraction combination problems using the calculator with 70 per cent accuracy on drill.
3. To be able to solve multiplication, subtraction, addition combi-

nation problems using the calculator with 70 per cent accuracy on drill.

TASK ANALYSIS:

1. Refer to Student Math Exercise Manual, Part XXXVIII, Exercises A, B, and C for drill problems.

64th DAY

OBJECTIVES:

1. To be able to solve problems requiring references to tables of amounts, formulas, and percentages with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Buyer's Guide Reports 1978 Autos; students are to locate the list prices and add the price of equipment as follows: 1978 AMC Concord 4 door sedan with white steel belted radials, automatic transmission, power steering, air conditioning, tinted glass, cruise control, and rear window defogger; 1978 Oldsmobile Cutlass with white steel belted radials, automatic transmission, power steering, power disc brakes, AM/FM radio, air conditioning, tinted glass, cruise control, rear window defogger; Ford Thunderbird, AM/FM radio, air conditioner, tinted glass, cruise control, and rear window defogger.

   Students locate "Dealing with the Dealer" in the Table of Contents and determine the total dealer's cost of each car with equipment as stated. The dealer's cost multiplier is the per cent factor to multiply with the list prices of extra equipment.

64th DAY (Continued)

Subtract the total dealer's cost from the total list price of each equipped car.

2. Refer to the total dealer's cost of each car and multiply each total by six per cent to determine a fair price for each automobile.
3. Multiply the total dealer's cost for each car by four per cent and determine the money saved on each car by those paying only four per cent above dealers total cost.

65th DAY

OBJECTIVES:

1. To be able to solve stated problems with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Buyer's Guide Reports 1978 Autos and to Part XXXIX, Exercise A, Student Math Exercise Manual for stated problems that determine how much profit a dealer makes, if the dealer sells a new car at the list price, if the dealer sells a new car at a six per cent increase over dealer's cost, and if the dealer sells a new car at a four per cent increase over dealer's cost.

66th DAY

OBJECTIVES:

1. To be able to solve stated problems with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XXXIX, Exercise B, Student Math Exercise Manual and use J. C. Whitney & Co. Automotive & Accessories for problems

66th DAY (Continued)

determining parts costs. Use parts orders for assembly parts of the 68th and previous assembly days. Students will use the Time/Dollar Conversion Table.

67th DAY

OBJECTIVES:

1. To be able to solve stated problems with 75 per cent accuracy on a test.

TASK ANALYSIS:

1. Refer to Part XXXIX, Exercise AA, Teacher Math Exercise Manual for test problems.

68th DAY

NOTE: Students are to assemble their models according to 68th day of Reading and Language Arts lesson plans, if they are not assembling during a different period. Other students are instructed according to the following lesson plans.

OBJECTIVES:

1. To be able to solve stated problems concerned with volume with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Students will determine example cubic inch displacement of various engines when the bore and stroke amounts are given enabling the determination of the cubic inch displacement.
2. Refer to Student Math Exercise Manual, Part XL, Exercise A.

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69th DAY

OBJECTIVES:

1. To be able to solve simple division problems with 70 per cent accuracy of assignment.

TASK ANALYSIS:

1. Teacher demonstrates the comparison of grouping nuts by ones, twos, threes, and fours with the written division of a given amount divided by one, two, three, and four.
2. Refer to Student Math Exercise Manual, Part XL, Exercise B for dividion problems.

70th DAY

OBJECTIVES:

1. To be able to solve simple division problems with 70 per cent accuracy of assignment.
2. To be able to solve stated simple division problems using one digit as divisor.

TASK ANALYSIS:

1. Students demonstrate the use of nuts by grouping and write the division problems as they group from a whole.
2. Students go to the chalkboard for drill; refer to Part XL, Exercise C, Student Math Exercise Manual for drill division problems.
3. Refer to Part XL, Exercixe D, Student Math Exercise Manual for seat work of stated division problems of single digit divisors.

71st DAY

OBJECTIVES:

1. To be able to solve problems of two digits divided by one digit with

and without a remainder having 75 per cent accuracy on assignment.

2. To be able to solve problems of three digits divided by one digit with and without a remainder having 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Demonstrate the use of short screws as the tens and nuts as ones divided by a nut and nuts as a divisor. Refer to Part XLI, Exericse A, Student Math Exericse Manual.

72nd DAY

OBJECTIVES:

1. To be able to solve division problems with single digit divisors with 75 per cent accuracy on a test.

TASK ANALYSIS:

1. Refer to Part XLI, Exercise AA, Teacher Math Exercise Manual for test problems.

73rd DAY

NOTE: Students assemble their Visible V8 Engine models according to the 73rd day of Reading and Language Arts lesson plans, if they do not assemble their models at a different period of the day. Students who assemble their models at a different period are to be instructed with the following lesson plans.

OBJECTIVES:

1. To be able to solve division problems using ten as a divisor with 80 per cent accuracy on assignment.

2. To be able to solve division problems using twenty as a divisor with

73rd DAY (Continued)

80 per cent accuracy on assignment.

TASK ANALYSIS:

1. Demonstrate on the chalkboard a division problem that is solved without a remainder.
2. Refer to Part XLI , Exercise B, Student Math Exercise Manual for problems divided by ten without a remainder or decimal.
3. Refer to Part XLI , Exercise C, Student Math Exercise Manual for problems divided by twenty without a remainder or decimal.

74th DAY

OBJECTIVES:

1. To be able to solve division problems with ten as a divisor with and without a remainder, having 70 per cent accuracy on assignment.
2. To be able to solve division problems with twenty as a divisor with and without a remainder, having 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XLII , Exercise A, Student Math Exercise Manual for drill and seat work assignment with ten as a divisor.
2. Refer to Part XLII , Exercise B, Student Math Exercise Manual for drill and seat work assignment using twenty as a divisor.

75th DAY

OBJECTIVES:

1. To be able to solve division problems using two digits as a divisor with 70 per cent accuracy on assignment.

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TASK ANALYSIS:

1. Demonstrate the use of digits starting with eleven as a divisor. Have students to the chalkboard for drill with problems of eleven, twelve, and twenty-one as divisors dividing two digit amounts without remainders then with remainders.
2. Refer to Part XLIII, Exercise A, Student Math Exercise Manual for two digit divisor problems.

76th DAY

OBJECTIVES:

1. To be able to solve division problems using two digits that are dividing two digits with 70 per cent accuracy on assignment.
2. To be able to solve division problems using two digits that are dividing three digits with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XLIII, Exercise B, Student Math Exercise Manual for problems of two digits of differing amounts as divisors that are dividing two digits with and without remainders.
2. Refer to Part XLIII, Exercise C, Student Math Exercise Manual for problems of two digits dividing three digits with and without remainders.

77th DAY

OBJECTIVES:

1. To be able to solve division problems using two digits dividing two and three digits with 75 per cent accuracy on a test.

77th DAY (Continued)

TASK ANALYSIS:

1. Refer to Part XLIV, Exercise AA, Teacher Math Exercise Manual for test problems.

78th DAY

NOTE: Students are to assemble their Visible V8 Engine models using Reading and Language Arts lesson plans, 78th day, if they do not assemble their models during a different period.

Students assembling their models during a different period of the day are to be instructed, using the following lesson plans.

OBJECTIVES:

1. To be able to solve division problems using two digits dividing three and four digits with 70 per cent accuracy on assignment.
2. To be able to solve division problems using one digit dividing three and four digits that include a decimal point and with or without a remainder with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XLIV, Exercise BB, Teacher Math Exercise Manual for chalkboard drill.
2. Refer to Part XLIV, Exercise A and B, Student Math Exercise Manual for seat work assignments.

79th DAY

OBJECTIVES:

1. To be able to solve division problems using two digits dividing three and four digits with 70 per cent accuracy on assignment.
2. To be able to solve division problems using two digits dividing

79th DAY (Continued)

four and five digits with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Chalkboard drill using Part XLV, Exercise AA, Teacher Math Exercise Manual problems for drill and for seat work use Part XLV, Exercise A, Student Math Exercise Manual.
2. Refer to Part XLV, Exercise BB, Teacher Math Exercise Manual for drill problems; use Part XLV, Exercise B, Student Math Exercise Manual for seat work problems.

80th DAY

OBJECTIVES:

1. To be able to solve division problems using two digits dividing three to six digits with 75 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XLV, Exercise CC, Teacher Math Exercise Manual for drill problems.
2. Refer to Part XLV, Exercise C, Student Math Exercise Manual for seat work problems.

81st DAY

OBJECTIVES:

1. To be able to solve division problems using two digits with a decimal dividing three or more digits with 80 per cent accuracy on assignment.
2. To be able to solve division problems using three digits dividing three or more digits with decimals with 70 per cent accuracy.

TASK ANALYSIS:

1. Refer to Part XLVI, Exercise AA, Teacher Math Exercise Manual for

81st DAY (Continued)

drill problems of two digit divisors.

2. Refer to Part XLVI , Exercise A, Student Math Exercise Manual for assignment.
3. Refer to Part XLVI , Exercise BB, Teacher Math Exercise Manual for drill problems of three digit divisors.
4. Refer to Part XLVI , Exercise B, Student Math Exercise Manual for assignment.

82nd DAY

OBJECTIVES:

1. To be able to solve division problems using two and three digit divisors with 70 per cent accuracy on a test.

TASK ANALYSIS:

1. Refer to Part XLVI , Exercise CC, Teacher Math Exercise Manual for test.

83rd DAY

NOTE: Students without the opportunity to assemble their Visible V8 Engine models during a different period are to assemble their models this period using the Reading and Language Arts lesson plans, 83rd day. Other students are to be instructed using the following lesson plans.

OBJECTIVES:

1. To be able to solve division problems using one digit expressed as a decimal fraction for the divisor, with 70 per cent accuracy on assignment.
2. To be able to solve division problems using two digits with a decimal

83rd DAY (Continued)

expressing tenths or hundredths as a divisor with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XLVII , Exercise AA, Teacher Math Exercise Manual for drill problems.
2. Refer to Part XLVII , Exercise A, Student Math Exercise Manual for seat work assignment.
3. Refer to Part XLVII , Exercise BB, Teacher Math Exercise Manual for drill problems.
4. Refer to Part XLVII , Exercise B, Student Math Exercise Manual for seat work assignment.

84th DAY

OBJECTIVES:

1. To be able to solve division problems using one digit in the tenths and hundredths position as the divisor, with 70 per cent accuracy on assignment.
2. To be able to solve division problems with two digits and a decimal expressing tenths and hundredths as the divisor with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Demonstrate division problems on the chalkboard and have students drill at the chalkboard. Refer to Part XLVII , Exercise CC, Teacher Math Exercise Manual.
2. Demonstrate division problems on the chalkboard referring to Exercise DD, Part XLVII , Teacher Math Exercise Manual.

84th DAY (Continued)

3. Refer to Part XLVII, Exercises C and D, Student Math Exercise Manual for seat work assignments.

85th DAY

OBJECTIVES:

1. To be able to solve division problems with one or two digits in the tenth or hundredths position as a divisor with 75 per cent accuracy on assignment.
2. To be able to solve division problems with three digits and a hundredths position shown as the divisor with 75 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XLVIII, Exercises AA, and BB, Teacher Math Exercise Manual for chalkboard drill problems.
2. Refer to Part XLVIII, Exercises A and B, Student Math Exercise Manual for seat work problems.

86th DAY

OBJECTIVES:

1. To be able to solve division problems of one to three digits using the decimal point expressing tenths, hundredths, and thousandths as the divisor with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XLVIII, Exercise CC, Teacher Math Exercise Manual for chalkboard drill problems.
2. Refer to Part XLVIII, Exercise C, Student Math Exercise Manual for assignment problems.

87th DAY

OBJECTIVES:

1. To be able to solve division problems using one to three digits expressed with a decimal for the divisor with 70 per cent accuracy on a test.

TASK ANALYSIS:

1. Refer to Exercise DD, Part XLVIII, Teacher Math Exercise Manual for test problems.

88th DAY

NOTE: Students assemble their Visible V8 Engine models this period, if they do not assemble the models during a different period. Use the Reading and Language Arts lesson plans, 88th day. Other students are instructed with the following lesson plans.

OBJECTIVES:

1. To be able to use the calculator solving division problems with 75 per cent accuracy on assignment.
2. To be able to solve stated division problems with 70 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XLIX, Exercise A, Student Math Exercise Manual for seat work assignment.
2. Refer to Part XLIX, Exercise AA, Teacher Math Exercise Manual for drill problems.

89th DAY

OBJECTIVES:

1. To be able to solve addition, subtraction, multiplication and division

89th DAY (Continued)

problems with 75 per cent accuracy on assignment.

2. To be able to solve stated problems using addition, subtraction, multiplication, and/or division with 75 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XLIX, Exercise BB, *Teacher Math Exercise Manual* for drill problems.
2. Refer to Part XLIX, Exercises B and C, *Student Math Exercise Manual* for assignment problems.

90th DAY

OBJECTIVES:

1. To be able to solve problems amortizing car loans with 70 per cent accuracy on assignment.
2. To be able to solve various problems using the dealers billing sheet with 75 per cent accuracy on assignment.

TASK ANALYSIS:

1. Refer to Part XLIX, Exercise CC, *Teacher Math Exercise Manual* for drill problems. Instruct students in sentence interpretations of written problems.
2. Refer to Part XLIX, Exercise D, *Student Math Exercise Manual* for seat work assignments.

91st DAY

OBJECTIVES:

1. To be able to solve problems of measurement involving proportion with 75 per cent accuracy on assignment.

91st DAY (Continued)

TASK ANALYSIS:

1. Refer to Part L , Exercise AA, Teacher Math Exercise Manual for drill problems.
2. Refer to Part L , Exercise A, Student Math Exercise Manual for assignment problems.

92nd DAY

OBJECTIVES:

1. To be able to review addition, subtraction, multiplication, division and stated problems with accuracy of 80 per cent.

TASK ANALYSIS:

1. Refer to Exercises B and C, Part L , Student Math Exercise Manual for review problems.

93rd DAY

OBJECTIVES:

1. To be able to solve various problems with 75 per cent accuracy on a test.
2. Refer to Part L , Exercises BB and CC, Teacher Math Exercise Manual for tests.

STUDENT MATH EXERCISE MANUAL

Part I, Exercise A

Total and fill in the blanks; use nuts for ones

(1) 1 nut 1 + 1 = ___ nuts
+1 nut
nuts

(2) 1 nut 1 + 2 = ___ nuts
+2 nuts
nuts

(3) 2 nuts 2 + 1 = ___ nuts
+1 nut
nuts

(4) 3 nuts 3 + 2 = ___ nuts
2 nuts
nuts

(5) 2 nuts 2 + 3 = ___ nuts
+3 nuts
nuts

(6) 4 nuts ___ + ___ = ___ nuts
+2 nuts
nuts

(7) 3 nuts 3 + ___ = ___ nuts
+___ nuts
6 nuts

(8) ___ nuts ___ + 1 = 6 nuts
+1 nut
6 nuts

(9) 4 nuts 4 + 4 = ___ nuts
+4 nuts
nuts

(10) 3 nuts 3 + ___ = 8 nuts
+___ nuts
8 nuts

Part I, Exercise A (Continued)

(11) 1 nut 1 + ___ = 8 nuts
+__ nuts
8 nuts

(12) 5 nuts 5 + ___ = 9 nuts
+__ nuts
9 nuts

Students originate the following addends not given that will be equal to the sum.

(13) __ nuts __ + __ = 8 nuts
+__ nuts
8 nuts

(14) __ nuts __ + __ = 7 nuts
+__ nuts
7 nuts

(15) __ nuts __ + __ = 9 nuts
+__ nuts
9 nuts

Part I, Exercise B

Fill in the blanks and totals; for counting, use short screws for tens through nineties and nuts for ones through nines. Example: nine short screws plus nine nuts equal 99.

(1) 10 1 short screw + 1 nut = __
+ 1

(2) 2 2 nuts + 1 short screw =__
+10

(3) 10 1 short screw + 3 nuts = __
+ 3

(4) 5 5 nuts + 1 short screw =__
+10

Part I, Exercise B (Continued)

(5) 10 1 short screw + 7 nuts = ___
+ 7

(6) 4 nuts + 1 short screw = ___
+ 10

(7) 9 9 nuts + 1 short screw = ___
+ 10

(8) 10 1 short screw + 6 nuts = __
+ 6

(9) 3 __ nuts + __ short screw and __ nuts = ___
+ 12

(10) 13 __ short screw and __ nuts + ___ nuts = ___
+ 2

(11) 15 __ short screw and __ nuts + __ nuts = ___
+ 4

(12) 4 __ nuts + __ short screws and __ nuts = ___
+ 25

(13) 21 __ short screws and __ nut + __ nuts = ___
+ 7

(14) 8 __ nuts + __ short screws and __ nuts = ___
+ 32

Part I, Exercise B (Continued)

(15) 29 __ short screws and __ nuts + __ nuts = ___
+ 7

(16) 43 __ short screws and __ nuts + __ nuts = __
+ 9

(17) 87 __ short screws and __ nuts + __ nuts = ___
+ 2

(18) 4 __ nuts + __ short screws and __ nuts = ___
+58

(19) 77 __ short screws and __ nuts + __ nuts = __
+ 7

(20) 6 __ nuts + __ short screws and __ nuts = __
+89

Part I, Exercise C

Fill in the blanks and totals

(1) 10 1 short screw + 1 short screw and one nut = __
+11

(2) 12 1 short screw and 2 nuts + 1 short screw and 1 nut = ___
+11

Part I, Exercise C (Continued)

(3) 21 2 short screws and 1 nut + 1 short screw and 3 nuts = ___
+13

(4) 23 2 short screws and 3 nuts + 2 short screws and 2 nuts = __
+22

(5) 28 2 short screws and 8 nuts + 4 short screws and 1 nut = __
+41

(6) 37 3 short screws and 7 nuts + __ short screws and __ nuts = __
+ 32

(7) 54 5 short screws and 4 nuts + __ short screws and __ nuts = __
+ 25

(8) 63 __ short screws and __ nuts + __ short screws and __ nuts = __
+ 36

(9) 78 __ short screws and __ nuts + __ short screws and __ nuts = __
+ 22

(10) 93 __ short screws and __ nuts + __ short screws and __ nuts = __
+ 37

404

Part I, Exercise C (Continued)

(11) 32   32 + 44 = ___
+ 44

(12) 57   57 + 32 = ___
+ 32

(13) 65   65 + 37 = ___
+ 37

(14) 48   48 + 74 = ___
+ 74

(15) 92   92 + 69 = ___
+ 69

(16) 45   23 + 45 = ___
+ 23

(17) 78   98 + 78 = ___
+ 98

(18) 83   49 + 83 = ___
+ 49

(19) 19   87 + 19 = ___
+ 87

(20) 46   57 + 46 = ___
+ 57

Part I, Exercise D

Fill in the blanks and find the totals

(1) 100   1 long screw + 1 nut = ___
+ 1

(2) 3   3 nuts + 1 long screw and
+ 101   1 nut = ___

(3) 5   5 nuts + 2 long screws and 3 nuts = ___
+ 203

(4) 7   7 nuts + 4 long screws and 2 nuts = ___
+ 402

Part I, Exercise D (Continued)

(5) 306 3 long screws and 6 nuts + 5 nuts = ___

+ 5

(6) 7 7 nuts + 5 long screws and 5 nuts = ___

+ 505

(7) 708 ___ long screws and ___ nuts + 4 nuts = ___

+ 4

(8) 607 ___ long screws and ___ nuts + ___ nuts = ___

+ 6

(9) 9 ___ nuts + ___ long screws and ___ nuts = ___

+ 805

(10) 324 ___ long screws and ___ short screws and ___ nuts + ___ nuts = ___

+ 8

(11) 943 943 + 6 = ___

+ 6

(12) 682 8 + 682 = ___

+ 8

(13) 493 5 + 493 = ___

+ 5

(14) 7 593 + 7 = ___

+ 593

Part I, Exercise D (Continued)

(15) 3 398 + 3 = ___
+ 398

(16) 6 289 + 6 = ___
+ 289

(17) 857 7 + 857 = ___
+ 7

(18) 985 985 + 8 = ___
+ 8

(19) 6 6 + 578 = ___
+ 578

(20) 795 8 + 795 = ___
+ 8

Part I, Exercise E.

Fill in the blanks and find the totals.

(1) 111 1 long screw, 1 short screw and 1 nut + 1 short screw and
+ 11 1 nut = ___

(2) 242 2 long screws, 4 short screws, and 2 nuts + 1 short screw
+ 13 and 3 nuts = ___

(3) 453 4 long screws, five short screws, and 3 nuts + 2 short screws
+ 25 and 5 nuts = ___

(4) 46 4 short screws and 6 nuts + 3 long screws, 5 short screws and
+ 353 3 nuts = ___

(5) 736 7 long screws, 3 short screws, and 6 nuts + 2 short screws and
+ 26 6 nuts = ___

Part I, Exercise E (Continued)

(6) 623 ___ long screws, ___ short screws, ___ nuts + ___ short screws

+ 58 ___ nuts = ___

(7) 487 ___ long screws, ___ short screws, and ___ nuts + ___ short screw

+ 16 and ___ nuts = ___

(8) 875 ___ long screws, ___ short screws, and ___ nuts + ___ short screw

+ 17 and ___ nuts = ___

(9) 954 ___ long screws, ___ short screws, and ___ nuts + ___ short screws

+ 39 and ___ nuts = ___

(10) 994 ___ long screws, ___ short screws, and ___ nuts + ___ short screws

+ 58 and ___ nuts = ___

(11) 638 638 + 43 = ___ (12) 859 28 + 859 = ___

+ 43 + 28

(13) 296 65 + 296 = ___ (14) 88 893 + 88 = ___

+ 65 + 893

(15) 937 65 + 937 = ___ (16) 743 68 + 743 = ___

+ 65 + 68

Part I, Exercise E (Continued)

(17) 392 + 79   79 + 392 = ___

(18) 86 + 886   886 + 86 = ___

(19) 32 + 799   799 + 32 = ___

(20) 19 + 985   985 + 19 = ___

Part I, Exercise F

(1) 100 + 10 + 1   1 long screw + 1 short screw + 1 nut = ___

(2) 205 + 12 + 2   2 long screws and 5 nuts + 1 short screw and 2 nuts + 2 nuts = ___

(3) 214 + 22 + 3   2 long screws, 1 short screw, and 4 nuts + 2 short screws and 2 nuts + 3 nuts = ___

(4) 382 + 12 + 5   3 long screws, 8 short screws, 2 nuts + 1 short screw and 2 nuts + 5 nuts = ___

Part I, Exercise F (Continued)

(5) 6 6 nuts + 2 short screws and 3 nuts + 4 long screws, 6 short
23 screws and 9 nuts = ___
+ 469

(6) 4 ___ nuts + ___ short screws and ___ nuts + ___ long screws, ___
32 short screws and ___ nuts = ___
+ 652

(7) 47 ___ short screws and ___ nuts + ___ nuts + ___ long screws, ___
3 short screws and ___ nuts = ___
+ 826

(8) ____ 6 long screws, 3 short screws and 5 nuts + 4 short screws and
____ 3 nuts + 7 nuts = ___
+ ____

(9) ____ 1 short screw and 3 nuts + 7 long screws, 6 short screws, 8
____ nuts + 5 nuts = ___
+ ____

(10) ____ 6 nuts + 3 long screws, 7 short screws, 2 nuts + 6 short screws
____ and 9 nuts = ___
+ ____

Part I, Exercise F (Continued)

(11) 876   2 + 21 + 876 = ___

21

+ 2

(12) 453   5 + 453 + 38 = ___

38

+ 5

(13) 69   69 + 2 + 356 = ___

2

+ 356

(14) 81   474 + 81 + 7 = ___

7

+ 474

(15) 689   689 + 8 + 47 = ___

47

+ 8

(16) ___   583 + 79 + 5 = ___

___

+ ___

(17) ___   9 + 953 + 74 = ___

___

+ ___

(18) ___   33 + 66 + 748 = ___

___

+ ___

(19) 376   376 + 80 + ___ = 461

80

+ ___

461

(20) 9   9 + 83 + ___ = 926

83

+ ___

926

Part II, Exercise A

Counting drill.

(1) Count from 1 thru 10; from 10 thru 1

(2) Count from 8 thru 18; from 18 thru 8.

Part II, Exercise A (Continued)

(3) Count from 15 thru 27; from 27 thru 15.

(4) Count from 24 thru 39; from 39 thru 24.

(5) Count from 37 thru 50; from 50 thru 37.

(6) Count from 48 thru 63; from 63 thru 48.

(7) Count 62 thru 78; 78 thru 62.

(8) Count 74 thru 89; 89 thru 74.

(9) Count 86 thru 110; 110 thru 86.

(10) Count 106 thru 123; 123 thru 104.

(11) Count 117 thru 129; 129 thru 117.

(12) Count 127 thru 153; 153 thru 122.

(13) Count 264 thru 300; 300 thru 264.

(14) Count 336 thru 353; 353 thru 330.

(15) Count 350 thru 370; 378 thru 352.

(16) Count 448 thru 470; 472 thru 448.

(17) Count 487 thru 522; 525 thru 485.

(18) Count 983 thru 1,019; 1,025 thru 985.

(19) Count 1,988 thru 2,023; 2,023 thru 1,988.

(20) Count 12,387 thru 12,418; 12,418 thru 12,378.

Part II, Exercise B

Fill in blanks. Addition assignment drill. Find the total then express the total in the terms of how many nuts, short screws, long screws, and rivets. Rivets represent the thousands place; long screws represent the hundreds place; short screws, the tens place; and nuts the ones place.

Part II, Exercise B (Continued)

(1) 3
+ 5
nuts

(2) 2
+ 7
nuts

(3) 5
+ 4
nuts

(4) 8
+ 2
= _ short screw

(5) 4
+ 7
= __ & __.

(6) 8
+ 5
= __ & __.

(7) 6
+ 9
= __ & __.

(8) 7
+ 5
= __ & __.

(9) 3
+ 4
= nuts

(10) 7
+ 6
= __ & __.

(11) 23
+ 7

(12) 5
+ 18

(13) 7
+ 28

(14) 19
+ 9

(15) 17
+ 6

(16) 10
+ 4

(17) 6
+ 38

(18) 57
+ 9

(19) 93
+ 3

(20) 78
+ 7

(21) 358
+ 4

(22) 462
+ 27

(23) 89
+ 36

(24) 528
+ 134

(25) 32 + 9 + 793 = ___

(26) 482 + 39 + 7 = ___

(27) 369 + 4 + 83 = ___

(28) 92 + 763 + 9 = ___

(29) 1,523 + 478 + 93 = ___

(30) 8,726 + 283 + 7 = ___

Part III, Exercise A

Use rivets representing thousands, long screws representing hundreds, short screws representing tens, and nuts to represent ones.

(1) 3 nuts + 4 nuts = ___ (2) 4 nuts + 3 short screws = ___

(3) 5 nuts + 3 short screws + 2 long screws = ___

(4) 7 nuts + 2 short screws and 4 nuts + 6 long screws = ___

(5) 4 nuts + 5 short screws and 7 nuts + 7 long screws and 3 short screws = ___

(6) 3 long screws, 5 short screws + 4 short screws and 6 nuts + 8 nuts = ___

(7) 7 long screws, 8 short screws and 3 nuts + 7 short screws + 8 nuts = ___

(8) 7 nuts + 8 short screws and 9 nuts + 9 long screws, 9 short screws, and 9 nuts = ___

(9) 3 nuts + 8 long screws, 9 short screws, and 6 nuts + 7 short screws and 8 nuts = ___

(10) 5 long screws, 9 short screws, 8 nuts + 3 short screws and 4 nuts + 2 nuts = ___

Part III, Exercise B

Numeral recognition drill. Teacher writes the numerals on the chalkboard and assigns students to pronounce the amount. The amount is written and students write the numerals signifying the amount.

(1) 38 (2) 847 (3) 968 (4) 1,342 (5) 4,065 (6) four hundred twenty-three (7) six hundred fifty-four (8) seven thousand nine hundred fifty-two (9) nine thousand eight hundred fifty-six (10) sixty thousand three hundred and seventy-four.

Part IV, Exercise A

Total addition problems or fill in the blanks.

(1) 4
+ 3
4 + 3 = ___

(2) 7
+ 5
7 + 5 = ___

(3) 6
+ 12
6 + 12= ___

(4) 9
3
+ 2
9 + 3 + 2 = ___

(5) 13
+ 15
13 + 15 = ___

(6) 12
3
+ 76
12 + 3 + 76 = ___

(7) 8
___
+ 24
35
8 + ___ + 24 = 35

(8) 13
275
+ 14
13 + 275 + 14 = ___

(9) ___
43
+ 359
494
___ + 43 + 359 = ___

(10) 1023
16
+ 5
1023 + 16 + 5 = ___

(11) 567
___
+ 72
716
567 + ___ + 72 = ___

Part IV, Exercise A (Continued)

(12) 342   342 + 87 + 3025 = ___
87
+3025

(13) 68   4384 + 68 + 9 = ___
9
+4384

(14) ___   ___ + 359 + 5962 = 6,852
359
+ 5962

(15) 89   89+ ___ + 357 = 446
___
+ 357
446

(16) 3,578   3,578 + 5,784 = ___
+ 5,784

(17) 832   75 + 6,406 + 832 = ___
75
+ 6406

(18) 4,907   ___ + 895 + 4,907 = ___
___
+ 895
5,874

(19) 8,876   8,876 + ___ + 387 = ___
___
+ 387
9,263

(20) 29   2,972 + 29 + 837 = ___
837
+ 2,972

Part V, Exercise A.

Total the following addition problems or fill in the blanks.

Part V, Exericse A (Continued)

(1) 1,089
321
65
+ 2

(2) 32
498
73
+ 2,145

(3) 3,452 + 637 + 25 + 4 = ___

(4) 1,000
982
86
+ 7

(5) 831
1,635
76
9

(6) 832
77
5
+ 2,500

(7) 1,035 + 8 + 97 + 946 + ___

(8) 7,988
992
9
+ 94

(9) 8,991
998
9
97

(10) 5,832 + ___ + 38 + 7 = 6,000

Part V, Exercise B

Using the Time/Dollar Conversion Table, determine the following charges for labor.

(1) 0.3 of an hour at $6.00 per hour = ___

(2) 1 hour at $11.50 = ___

(3) 2 hours at $9.00 per hour = ___

(4) 1.1 hour at $7.00 = ___

(5) 1.4 hours at $13.00 = ___

(6) 2.8 hours at $16.00 = ___

(7) 3.7 hours at $19.00 = ___

Part V, Exercise B (Continued)

(8) 3.2 hours at $17.50 = ___

(9) 5.4 hours at $14.50 = ___

(10) 5.7 hours at $21.00 = ___

(11) 4.2 hours at $18.50 = ___

(12) 3.8 hours at $15.50 = ___

(13) 4.8 hours at $8.00 = ___

(14) 3.3 hours at $9.50 = ___

(15) 4.4 hours at $7.50 = ___

(16) 1.8 hours at $22.50 = ___

(17) 0.8 hours at $19.50 = ___

(18) 4.7 hours at $8.50 = ___

(19) 3.6 hours at $21.50 = ___

(20) 5.9 hours at $22.50 = ___

Part V, Exercise C

On 3" X 5" index cards copy the following codes which are found in the J. C. Whitney & Co. Automotive Parts & Accessories, on one side of the card and write the parts name on the opposite side.

(1) 73 - 260IN Starter Motor (2) 37 - 7037B Camshaft Kit
(3) 37 - 7041U Camshaft Kit (4) 89 - 4424B Distributor
(5) 37 - 7038P Camshaft Kit (6) 37 - 7040W Camshaft Kit
(7) 37 - 7039Y Camshaft Kit (8) 37 - 7042B Camshaft Kit
(9) 37 - 7046T Camshaft Kit (10) 37 - 7045N Camshaft Kit
(11) 37 - 7047A Camshaft Kit (12) 37 - 7049X Camshaft Kit
(13) 37 - 7048R Camshaft Kit (14) 73 - 2593U Air Cleaner

Part V, Exercise C (Continued)

(15) 73 - 2591Y Air Cleaner
(16) 73 - 2587W Air Cleaner
(17) 73 - 2591Y Air Cleaner
(18) 73 - 2585P Air Cleaner
(19) 73 - 2589B Air Cleaner
(20) 37 - 6998N Main Bearings
(21) 37 - 6100R Main Bearings
(22) 37 - 6099T Main Bearings
(23) 37 - 6092Y Main Bearings
(24) 37 - 6094U Main Bearings
(25) 37 - 5135W Main Bearing
(26) 37 - 5139Y Main Bearing
(27) 30 - 0539A Main Bearing
(28) 37 - 2205P Main Bearing
(29) 37 - 4238R Main Bearing
(30) 37 - 5145N Main Bearing
(31) 37 - 6642P Oil Pan
(32) 35 - 1316T Ignition Coil
(33) 88 - 5707P Ignition Coil
(34) 45 - 0724B Ignition Coil
(35) 89 - 4062P Crankshaft
(36) 89 - 4425R Connecting Rod
(37) 89 - 4063Y Crankshaft
(38) 89 - 4426X Connecting Rod
(39) 89 - 4427N Crankshaft
(40) 89 - 4429A Connecting Rod
(41) 37 - 6707A Cylinder Head
(42) 37 - 6705N Cylinder Head
(43) 37 - 4755B Valve Cover
(44) 37 - 6840P Rocker Arm Assembly
(45) 37 - 6841Y Rocker Arm Assembly
(46) 55 - 1758WFE Engine Block
(47) 55 - 2214RFE Engine Block
(48) 55 - 2212TFE Engine Block
(49) 55 - 2216UFE Engine Block
(50) 55 - 1760 BFE Engine Block

Part VI, Exercise A

Enter the following bills on billing sheets and total each bill; locate prices in the J. C. Whitney & Co. Automotive Parts & Accessories.

(1) P. Q. Publick — 1974 Dodge Dart TBL 497 67,543 mi.
509 Tonic Street — Phone, Business 982-3874
Port, Texas 23222

Part VI, Exercise A (Continued)

Replace 3 Push Rods 55-1070W @ $7.98 Oil 5 qts. @ $1.10

Replace 2 Rocker Arm Assemblies 37-6239N @ $48.95

Oil Filter $5.32 Labor $48.40

(2) Mighty Quick Delivery 89,763 miles

P. O. Box 8437

Somewhere, Texas 56780

Joe Jones

1972 Chevrolet Van TXS 743

Distributor Cap 55-1954A

Breaker Points 55-0793U

Ignition Coil 55-1316T

8 Spark Plugs 55-0293N

Labor 1.7 hours @ $11.50 per hour

(3) Royal Motor Inn

5383 International Rd.

Sommers, Texas 95960

Ph. 832-7239

1974 Volkswagen Bus

Air Cleaner 73-2352N

Oil Filter Cartridge 73-2187N

4 Intake Valves 88-1491N

4 Exhaust Valves 88-1492T

4 qts of oil @ $1.10

Labor 4.3 hours @ $14.00

Part VI, Exercise A (Continued)

(4) Capable Insurance Co.

P. O.Box 3234

Somewhere, Texas 38765

J. O. Cape

2315 Lake Road

Forest, Texas 76768 Lic. TXL 503

Ph. 382-8145 Mi. 45,437

1975 Ford Torino 302 engine

Crankshaft and Camshaft Timing Gears and Chains Set 37-6176R

Intake & Exhaust Valves, Valve Springs

8 Exhaust Valves 55-2281Y @ $3.59

8 Intake Valves 55-2281Y @ $3.59

Oil Pump 37-2071W @ $17.49

6 qts. oil @ $1.10

Labor 5.3 @ $15.00

(5) R. T. Lock

2315 Jackson St.

Somewhere, Texas 38764

Ph. 382-4327 Mi. 36,428

Lic. PTM 964 1975 Volkswagen

Crankshaft 89-4427N

Main Bearings 89-0694U labor 5.7 hours @ $17.50

Rod Bearings 89-0690B

4 Connecting Rods 89-4429A

4 Qts. oil @ $1.10 Oil Filter 73-2193T

Part VI, Exercise B

Place problems on dealers billing sheets; use Time/Dollar Conversion Table.

(1) R. B. Boles

P. O. Box 3287

St. Paul, Minn. 48235 Labor 3.4 hours @ $14.00

1975 Plymouth V8 Camper Pickup

360 engine PDL-420 Minn.

Camshaft kit 37-7043P $107.95

Timing Chain and Gear Set 37-5700X $25.98

(2) Tim Brown

2302 Lotus Street

Somewhere, Tex. 38765

Ph. 382-7142, Lic. TXM 302

Mi. 43,420

1972 American Motors Hornet

232 engine 6 cyl.

Crankshaft Kit 19-5969PE $74.98

Timing Chains and Gear Sets 37-6932N $31.98

5 qts oil @ $1.15

Oil Filter 55-1914N $1.98

Labor 4.2 @ $15.00

(3) Late Tree Service

P. O. Box 562

Somewhere, Tex. 38766

Ph. 382-4800 Mi. 54,821

Lic. TXN 874 Dodge Dart 1974

Part VI, Exercise B (Continued)

(3) 318 V8 Engine

Piston Ring Set 37-3347R $10.98

Connecting Rod Bearings 31-1396U $12.98

Main Bearings 37-2184X $16.98

Labor 5.3 hours @ $15.50

Oil 6 qts @ $1.15

Filter (Oil) 55-1914N $1.98

(4) Tracy Tire Co.

321 Merchant St.

Somewhere, Tex. 38765

Ph. 382-5960 Mi. 62,385

1977 Chevrolet 402 Eng.

Fuel Pump 73-2517T $17.95

Distributor 73-2464Y $34.95

1.7 hours labor @ $12.00

(5) J. & L. Tool Co.

4302 Market St.

Lacey, Tex. 54820

Ph. 432-8761 Lic. 4E 4581

Mi. 36,502

Jim Jenkins

3118 South St.

Somewhere, Tex. 38766

Ph. 382-5973

1973 Thunderbird 429 engine

Part VI, Exercise B (Continued)

(5) Carburetor 73-2017U $84.95

Spark Plugs set of 8 plugs 55-0293N $11.98

Labor 1.7 hours @ $9.00

Part VI, Exercise C

(1) As a manager of a garage, you have five mechanics employed. Each mechanic worked 7 hours a day for five days. Mechanic A makes $12.00 per hour; mechanic B makes $10.00 per hour; mechanic C makes $14.00 per hour; mechanic D makes $8.00 per hour; and mechanic E makes $11.00 per hour. Make an addition problem by using the Time/Dollar Conversion Table; solve the problem.

(2) Mechanic A worked the following week according to these hours: 5.4; 3.3; 4.8; 4.2; and 5.1. Make an addition problem and solve the problem. Use the Time/Dollar Conversion Table, for wage per hour.

(3) Originate an addition problem from the following information: The parts man sold the following parts in one day: Spark Plug Cable set 73-2584T $5.95; starter 13-1979R $64.95; Generator 88-7553W $79.95; and fuel pump 55-1302T at $6.98.

(4) The bookkeeper recieved three bills as follows: J. C. Whitney Automotive Part and Accessories - bill for parts $738.65; Exxon gasoline $234.83; Quaker State Oil $63.02. Make an addition problem and solve the problem.

(5) Mechanic B worked 3.8 hours; 2.7; 4.8; 1.7; 5.3; and 4.2 hours on six jobs. He makes $10.50 per hour now. Originate and solve the problem.

Part VII, Exercise A

(1) Students are to look in Chilton's Auto Repair Manual 1976 under

Part VII, Exercise A (Continued)

(1) "Tune-Up" for the degrees of opening of intake valves for a 1969 Gremlin 6 cylinder, 232 cubic inch engine; a 1970 Matador 8 cylinder, 360 cubic inch engine; a 1974 Ambassador 8 cylinder, 401 cubic inch; and a 1973 Rebel 8 cylinder, 304 cubic inch engine. Note: The camshaft causes the push rods to open the valves. Camshaft lifters form parts of a circle. one lifter on a camshaft has a number of degrees of extreme outside surface. These are the degrees opening of an intake valve.

Look at Step 7 of the Assembly Manual; examine the camshaft and feel the lifters on the camshaft. Turn the camshaft and notice the larger circle in the air that is made by the lifters in comparison to the rest of the camshaft.

Beside each degrees opening expressed in whole numbers and a fraction, write the degrees as a whole number with a decimal.

Part VII, Exercise B

(1) Look in Chilton's Auto Repair Manual 1976 find Tune-Up. Specifications for the American Motors Gremlin look under the heading Spark Plugs and subheading Gap. Notice the gap and write the amount .035 and what that means. Write .035 as a fraction. Under Distributor, Point Gap follow the same instructions you have for the Spark Plug Gap.

(2) Find the Aspen's Distributor Point Gaps and write each one as a fraction.

(3) Find the Challenger's Distributor's Point Gaps and write each as a fraction.

Part VII, Exercise B (Continued)

(4) Find the Valve Specifications, Stem to Guide Clearance for Intake and Exhaust of the Cordoba. Write the different clearances in fractions below each decimal in a column for Intake and another column for Exhaust.

Valve stems are inside valve guides. Their clearance is the amount of space between the outside diameter of the valve stem and the inside diameter of the valve guide.

Part VII, Exercise C

Locate the following parts in the J. C. Whitney Automobile Parts & Accessories record the parts name, number and price. Total the prices.

(1) Find a carburetor adapter for a 4 cylinder Willys Jeep; a distributor for a Jeep; a clutch plate for a 4 cylinder Jeep. Record parts name, code, and price. Total the prices.

(2) Find sets of connecting rod bearings for a 1963 Buick V8 Special; a 1970 Buick 6 cylinder 250 engine; 1971 Cadillac .020; Chevrolet Chevelle V8 1974 Std.; Chrysler 1972 V8 360 engine .010. Record parts number by each name and description given; record the price; then total the prices.

(3) Find sets of Main Bearings for each of the cars listed and described in number 2. Put parts codes and prices by each car's name and description. Total the prices.

(4) Find Block Assemblies for 1973 Chevrolet 350 V8; 1975 Chrysler 440 engine, standard transmission; 1972 Mustang 240 engine; and 1973 Mercury 351W engine. Record the stock number and cost beside each car named. Total the prices given.

Part VII, Exercise C (Continued)

(5) Find and record the following parts, stock numbers, and prices for a 1964 Volkswagen 40 H.P. engine. Valve push rods, valve lifters, intake valve, exhaust valve, rocker arm assembly, and crankshaft.

Part VIII, Exercise A

Part House Activities

(1) Each student locates four items in the J. C. Whitney & Co. Automotive & Accessories catalog. Record the parts name, automobile model and description, and parts stock number of each item on separate cards. Each student's parts selections must be different from the selections of other students. Select one of the students to be the Parts Manager. The other students are customers. The Parts Manager must locate the exact parts from the catalog and write a bill for the parts. The bill must include the part name, stock number and price. Prices must be totalled. When a student's order is filled, that student becomes the Parts Manager.

(2) Teacher produces the coded and parts named index cards that students copied for Part V, Exercise C. All but one set of the cards are placed into boxes with code numbers listed on the outside of each box. Ex. The Crankshaft kit codes are all on one box and the cards with any one of the codes are placed in that box.

When a customer hands a card with one of the codes to the Parts Manager, the Parts Manager locates the box with the code on it, then finds one of the cards with the identical code and give both cards to the customer. The activity may continue with different students becoming the Parts Manager. Every student should be a customer and a

Part VIII, Exercise A (Continued)

(2) Parts Manager.

Part VIII, Exercise B

Find the fair market price in the Car and Truck Appraisals book.

(1) Find the market price of a 1977, 6 Cylinder Matador, Model 85-7 in average condition without optional equipment.

(2) Find the market price of a 1976, 6 Cylinder Hornet, Model 05-7 with air conditioner and power steering and 14,205 miles on the odometer.

(3) Find the market price of a 1976, 8 cylinder Dodge Dart 4D Custom Sedan, Model LH41, with 16,523 miles, automatic transmission, air conditioner, and power steering.

(4) Find the market price of a 1975, 8 cylinder Chrysler Newport, Hard Top 4 Door, Model CL43 with 14,983 miles, air conditioning, Cruise Control, and leather upholstery.

(5) Find the market price of a 1973, 6 cylinder Chevrolet Chevelle, Wagon 2S, Model 1AC35 with 38,052 miles, air conditioning, Cruise Control, power steering, and stero with tape.

Part IX, Exercise A

Use the J. C. Whitney & Co. catalog as needed.

Write and compute the following problems on billing sheets.

(1) Joe Happy
2817 Night Street
Somewhere, Texas 38765
Ph. 523-0216, 124 Fiat Spyder, 1974 Coupe, Lic. XLB 402
3 Intake Valves 88-6773A each $3.89
5 Exhaust Valves 88-3841R each $4.99

Part IX, Exercise A (Continued)

(1) Valve grind gasket set 88-3268N @ $8.49
Labor 3.2 hours at $9.00 per hour

(2) Glad Laundry
309 Soap Street
Elsewhere, Texas 45238
Bus. Ph. 692-6894; 1970 Volkswagen Transporter 1600, Lic. 8B507
Crankshaft 89-4427N $64.98; main bearings 89-0694U @ $7.49.
Rod bearings 89-0690B, 3 connecting rods, 89-4429A @ $12.98 each.
Labor 5.3 hours @ $12.50 per hour.

(3) T & Q Barbecue House
702 Busy Street
Somewhere, Texas 38766
Ph. 523-3016; 1970 Chevrolet truck, Lic. 8N402,
Miles 49,328; Engine - 283V8
Fuel pump 55-1302D, $6.98
Piston Ring Sets, 3 7/8 Bore, 37-0439 set $12.90; Oil filter, 55-1914N
at $1.98; Labor 5.4 hours at $13.00 per hour.

(4) Marie Thompson
118 Apt. B. Lakeshor.
Somewhere, Texas 38766
Ph. 523-8599 Mustang II, 1975, 2300cc. License MTHOMP:
Timing Belt and Gear Sets, 37-6745A - $25.98
Connecting Rod Bearings 37-3776R set $6.98; Main Bearings 37-2189W
$9.98 set; Labor 4.7 hours @$15.00 per hour.

Part IX, Exercise A (Continued)

(5) Bob Brown

196 Apt. 10, Ross Ave.

Someplace, Texas 77320

Ph. 589-6201, 1975 Oldsmobile V8 260 engine with air conditioning Water pump 37-6078X, $20.98; Fiber Glass Fan 55-0891W extra heavy duty $19.98; Labor 2.3 hours at $12.00 per hour.

Part IX, Exercise B

Write the following written numerals and fill in the blanks with the numerals.

(1) twenty ___ (2) nineteen ___ (3) seventeen ___ (4) thirteen ___
(5) fourteen ___ (6) sixteen ___ (7) fifteen ___ (8) twenty-five ___
(9) thirty-eight ___ (10) twenty-one ___ (11) forty-nine ___
(12) fifty-seven ___ (13) one hundred ___ (14) eight-tenths ___
(15) two hundred sixty-three ___ (16) four hundred thirty-nine and
eight fifteenths ___ (17) seven hundred forty-eight and three hundredths ___
(18) nine hundred eighty-four and sixty-nine hundredths ___ (19) three
hundred seventy-five and forty-four thousandths ___ (20) one thousand
five hundred ninety-eight and forty-four hundredths ___ (21) two thousand
four hundred fifty-five and eighty-three hundredths ___ (22) seven thousand
six hundred seventy-four and five hundredths ___ (23) ten thousand two
hundred fourteen and three-tenths ___ (24) sixteen thousand eight hundred
ninety-three and thirty-four hundredths ___ (25) forty-five thousand six
hundred seventy-eight and ninety-two hundredths ___

Part X, Exercise A

Students enter the information on a billing sheet for each problem and

Part X, Exercise A (Continued)

total the amounts for each problem. Use the Time/Dollar Conversion Table.

(1) Jay M. Bird
2807 Mitchell St.
Somewhere, Texas 38596
Ph. 576-2987, Lic. TLP 550

Mi. 43,826; Buick Skylark, 1974
V8 350 eng.

Remanufactured Block Assembly 55-1760 BFE $429.98; Labor 15 hours @ $16.00 per hour; 6 qts. oil @ $1.12; oil filter $1.98.

(2) Texas Cleaners
4208 Bow Street
Somewhere, Texas 38596
Ph. 576-3208, Lic. 7X 438

Bob Lark
2910 South 18th Street
Somewhere, Texas 38597
Ph. 576-9328

1970 Volkswagen Transporter 1600cc eng. Mi. 76,032

37-6707A cylinder head assembly 2 @ $59.98 each; 89 - 1678 W Gasket Set $3.98; Labor 3.4 hours @ $16.50 per hour

(3) P. L. Hunter
942 Bear Street
Somewhere, Texas 38597

Ph. 576-3592; Lic 4X 502
1970 Jeep 3A; Mi. 67,295

Distributor $29.95

Labor 1.3 hours @ $9.50 per hour

(4) Mrs. Tim Lucas
2342 Trim Street
Somewhere, Texas 38597

Ph. 576-2968; Lic TLO 583
Mi. 38,567
1975 Dodge V8, 318 eng.

Rocker Arm Assembly 37-6239N $48.95

Intake Valves 55-1424N 8 @ $2.69 each.

Exhaust Valve 55-1426P 8@ $2.99 each

Part X, Exercise A (Continued)

(4) Labor 4.3 hours @ $13.50 per hour

(5) Miss Maria Vasquez Ph. 576-3119 Lic TLO 482

3241 South 19th Street Mi 38,542

Somewhere, Texas 38597 1975 Buick Special, 350 engine

Camshaft 37-6394Y $31.98

Camshaft Bearings 55-1373U set $4.98

Labor 4.8 @ $12.50 per hour

Part X Exercise B

Use the Car Truck Appraisals book to find the necessary information and total the required amounts.

(1) Mrs. Moore has a 1976, 8 Cyl. Plymouth Fury 4 door sedan, Model RL41 with 9,765 miles on the odometer. If Mrs. Moore trys to sell her car, what would be the market price? The car is in top condition and looks great.

(2) Jack Sport has a 1975, 8 cyl. Oldsmobile Cutlass Salon 2 door hard top, Model K57 with 23, 576 miles on the odometer. The car has the following extra equipment: air conditioner, cruise control, and power brakes. The car is in top condition. Find the fair market price for this car.

(3) Mr. Mason Flowers wants to sell his 1973 8 cylinder Ford Custom 500 Hardtop with 4 doors, Model 53 with 35,352 miles. It has an air conditioner, power door locks, power windows, and a stero with tape. The car is clean and is in good condition. What is the fair market price?

Part X Exercise B (Continued)

(4) Joe Flores has a 1971 8 cylinder Ford Mustang Fastback, Model 02. In 1977, he wants to trade the car in for a new car. He thinks he is entitled to the fair market price on his trade in; the dealer thinks he is entitled to the wholesale price. The car is in good condition. Find the market price and the wholesale price. The car has been driven only 58,796 miles.

(5) Helen Parker owns a 1973, 6 cylinder Chevrolet Camaro Sport Coupe, Model 1FG87 with 31,082 miles. The car is in good condition and clean. It has an air conditioner, cruise control, automatic transmission, and power steering. Find the fair market price and the loan price for this car.

Part XI, Exercises A, B, and C

Test materials will be supplied by the teacher.

Part XII, Exercise A

Each student should have 9 long screws representing one hundreds, 9 short screws representing tens, and nine nuts representing ones. Solve the following subtraction problems using the screws and nuts and put the numerals only after the equal sign.

(1) 3 nuts 3 nuts - 2 nuts = ___
- 2 nuts

(2) 6 nuts 6 nuts - 2 nuts = ___
- 2 nuts

Part XII, Exercise A (Continued)

(3) 8 nuts   8 nuts - 1 nut = ___

- 1 nut

(4) 1 short screw 7 nuts   1 short screw 7 nuts - 2 nuts = ___

- 2 nuts

(5) 2 short screws 5 nuts   2 short screws 5 nuts - 1 short screw

- 1 short screw 3 nuts   3 nuts = ___

(6) 5 short screws 7 nuts   5 short screws 7 nuts - 2 short screws

- 2 short screws 2 nuts   2 nuts = ___

(7) 8 short screws 6 nuts   8 short screws 6 nuts - 1 short screw

- 1 short screw 3 nuts   3 nuts = ___

(8) 6 short screws 4 nuts   6 short screws 4 nuts - 2 short screws

- 2 short screws 4 nuts   4 nuts = ___

(9) 4 short screws 7 nuts   4 short screws 7 nuts - 4 short screws

- 4 short screws 2 nuts   2 nuts = ___

(10) 7 short screws 5 nuts   7 short screws 5 nuts - 2 short screws

- 2 short screws 1 nut   1 nut = ___

Part XII, Exercise A (Continued)

(11) 1 long screw 1 short screw 5 nuts

- 3 nuts

1 long screw 1 short screw 5 nuts - 3 nuts = ___

(12) 4 long screws 3 short screws 6 nuts

- 2 long screws 2 short screws 2 nuts

4 long screws 3 short screws 6 nuts - 2 long screws 2 short screws 2 nuts = ___

(13) 5 long screws 4 short screws 3 nuts

- 4 long screws 2 short screws 1 nut

5 long screws 4 short screws 3 nuts - 4 long screws 2 short screws 1 nut = ___

(14) 3 long screws 5 short screws 7 nuts

- 3 long screws 2 short screws 2 nuts

3 long screws 5 short screws 7 nuts - 3 long screws 2 short screws 2 nuts = ___

(15) 5 long screws 4 short screws 5 nuts

- 2 long screws 4 short screws 4 nuts

Part XII, Exercise A (Continued)

(15) 5 long screws 4 short screws 5 nuts - 2 long screws 4 short screws 4 nuts = ___

(16) 7 long screws 5 short screws 6 nuts = ___
- 2 long screws 3 short screws 2 nuts = ___

(17) 5 long screws 4 short screws 5 nuts = ___
- 3 long screws 4 short screws 2 nuts = ___

(18) 8 long screws 3 short screws 4 nuts = ___
- 1 long screw 3 short screws 4 nuts =

(19) 465 = ___ long screws ___ short screws ___ nuts
- 234 ___ long screws ___ short screws ___ nuts

(20) 673 = ___ long screws ___ short screws ___ nuts
- 3[illegible] = ___ long screws ___ short screws ___ nuts

Part XII, Exercise B

Use long screws for one hundreds, short screws for tens and nuts for ones. Fill in the blanks with numerals only. Students are issued 18 of each.

(1) 5 long screws 7 short screws 9 nuts = ___
- 3 long screws 5 short screws 4 nuts = ___
___

(2) 8 long screws 5 short screws 7 nuts = ___
- 8 long screws 2 short screws 4 nuts = ___

Part XII, Exercise B (Continued)

(3) 9 long screws 9 short screws 8 nuts = ___
- 9 short screws 6 nuts = ___
___

(4) 9 long screws 6 short screws 9 nuts = ___
- 9 long screws 2 short screws 9 nuts = ___
___

(5) 4 long screws 8 short screws 6 nuts = ___
- 2 long screws __ short screws 4 nuts = ___
2 short screws = ___

(6) 7 long screws 4 short screws 8 nuts = ___
- _ long screws 3 short screws _ nuts = ___
2 long screws 4 nuts = ___

(7) 8 long screws 7 short screws 6 nuts = ___
- _ long screws _ short screws 3 nuts = ___
2 long screws 4 short screws = ___

(8) 5 long screws _ short screws 7 nuts = ___
- 2 long screws 6 short screws 5 nuts = ___
3 short screws = ___

(9) 9 long screws _ short screws _ nuts = ___
- 4 long screws 7 short screws 4 nuts = ___
2 short screws 4 nuts = ___

Part XII, Exercise B (Continued)

$$\begin{array}{rl} \text{(10)} & \text{6 long screws 5 short screws \_ nuts} = \_\_\_ \\ & -\ \text{4 long screws 2 short screws 8 nuts} = \_\_\_ \\ \hline & \text{1 nut} = \_\_\_ \end{array}$$

(11) $\begin{array}{r} 543 \\ -\ 231 \\ \hline \end{array}$ (12) $\begin{array}{r} 796 \\ -\ 462 \\ \hline \end{array}$ (13) $\begin{array}{r} 985 \\ -\ 532 \\ \hline \end{array}$ (14) $\begin{array}{r} 879 \\ -\ 74 \\ \hline \end{array}$ (15) $\begin{array}{r} 789 \\ -\ 39 \\ \hline \end{array}$

(16) $\begin{array}{r} 958 \\ -\ 753 \\ \hline \\ \end{array}$ (17) $\begin{array}{r} 657 \\ -\ 23\_ \\ \hline 3 \end{array}$ (18) $\begin{array}{r} 5\_8 \\ -\ 363 \\ \hline 3 \end{array}$ (19) $\begin{array}{r} \_74 \\ -\ 3\_2 \\ \hline 62\_ \end{array}$ (20) $\begin{array}{r} \_\ \_\ 7 \\ -\ 2\ 7\ 4 \\ \hline 7\ 2\ 3 \end{array}$

Part XII, Exercise C

Subtraction problems requiring borrowing.

(1) $\begin{array}{r} 10 \\ -\ 9 \\ \hline \end{array}$ (2) $\begin{array}{r} 13 \\ -\ 4 \\ \hline \end{array}$ (3) $\begin{array}{r} 12 \\ -\ 6 \\ \hline \end{array}$ (4) $\begin{array}{r} 23 \\ -\ 5 \\ \hline \end{array}$ (5) $\begin{array}{r} 28 \\ -\ 9 \\ \hline \end{array}$

(6) $\begin{array}{r} 94 \\ -\ 8 \\ \hline \end{array}$ (7) $\begin{array}{r} 56 \\ -\ 7 \\ \hline \end{array}$ (8) $\begin{array}{r} 75 \\ -\ 9 \\ \hline \end{array}$ (9) $\begin{array}{r} 86 \\ -\ 8 \\ \hline \end{array}$ (10) $\begin{array}{r} 38 \\ -\ 9 \\ \hline \end{array}$

(11) $\begin{array}{r} \_5 \\ -\ 7 \\ \hline 3\_ \end{array}$ (12) $\begin{array}{r} \_7 \\ -\ 9 \\ \hline 1\_ \end{array}$ (13) $\begin{array}{r} \_2 \\ -\ 5 \\ \hline 57 \end{array}$ (14) $\begin{array}{r} 61 \\ -\ 3 \\ \hline \\ \end{array}$ (15) $\begin{array}{r} \_4 \\ -\ \_ \\ \hline 15 \end{array}$

(16) $\begin{array}{r} 9\_ \\ -\ 8 \\ \hline \_5 \end{array}$ (17) $\begin{array}{r} 62 \\ -\ \_\_ \\ \hline 58 \end{array}$ (18) $\begin{array}{r} \_\ \_ \\ -\ 3 \\ \hline 89 \end{array}$ (19) $\begin{array}{r} 48 \\ -\ \_\_ \\ \hline 39 \end{array}$ (20) $\begin{array}{r} 83 \\ -\ 8 \\ \hline \\ \end{array}$

Part XII, Exercise D

Subtraction and Borrowing

(1) 342	(2) 123	(3) 587	(4) 495	(5) 234
- 4	- 6	- 8	- 9	- 6
(6) 315	(7) 918	(8) 403	(9) 807	(10) 103
- 8	- 9	- 7	- 9	- 5
(11) 101	(12) 205	(13) 908	(14) 100	(15) 775
- 2	- 7	- 9	- 8	- 9
(16) 515	(17) 405	(18) 302	(19) 201	(20) 101
- 8	- 6	- 3	- 4	- 6

Part XIII, Exercise A

Subtracting and borrowing, using long screws for one hundreds, short screws for tens and nuts for ones.

(1) 3 long screws 9 short screws 2 nuts = ___
- 6 short screws 3 nuts = ___
___

(2) 5 long screws 7 short screws 0 nuts = ___
4 short screws 1 nut = ___
___

Part XIII, Exercise A (Continued)

(3) 8 long screws 4 short screws 5 nuts = ___
$-$ 2 short screws 9 nuts = ___
___

(4) 6 long screws 5 short screws 4 nuts = ___
$-$ 2 short screws 7 nuts = ___
___

(5) 4 long screws 2 short screws 3 nuts = ___
$-$ 2 short screws 8 nuts = ___
= ___

(6) 7 long screws 3 short screws 2 nuts = ___
$-$ 3 short screws 4 nuts = ___
___

(7) 9 long screws 6 short screws 5 nuts = ___
$-$ 8 short screws 7 nuts = ___
= ___

(8) 1 long screw 8 short screws 6 nuts = ___
$-$ 8 short screws 9 nuts = ___
= ___

(9) 5 long screws 7 short screws 9 nuts = ___
$-$ 7 short screws 9 nuts = ___
= ___

Part XIII, Exercise A (Continued)

(10) 4 long screws 3 short screws 7 nuts = ___

- 8 short screws 9 nuts = ___

= ___

(11) 692 = __ long screws __ short screws __ nuts

- 75 = __ short screws __ nuts

__ long screws __ short screws __ nuts

(12) 546 = __ long screws __ short screws __ nuts

- _8 = __ short screws __ nuts

_1_ __ long screws __ short screws __ nuts

(13) 873 = __ long screws __ short screws __ nuts

- 7_ = __ short screws __ nuts

__8 __ long screws __ short screws __ nuts

(14) 947 = __ long screws __ short screws __ nuts

- ___ = __ short screws __ nuts

_99 __ long screws __ short screws __ nuts

(15) 159 = __ long screws __ short screws __ nuts

- 74 = __ short screws __ nuts

(16) 482 = __ long screws __ short screws __ nuts

- 87 = __ short screws __ nuts

Part XIII, Exercise A (Continued)

(17) 2_5 = __ long screws __ short screws __ nuts
- 59 = __ short screws __ nuts
_8_

(18) 3_4 = __ long screws __ short screws __ nuts
- 6_ = __ short screws __ nuts
_78

(19) 76_ = __ long screws __ short screws __ nuts
- 94 = __ short screws __ nuts
__8

(20) 5_7 = __ long screws __ short screws __ nuts
- 3_ = __ short screws __ nuts
_08

Part XIII Exercise B

Subtract three digits from four digits. Rivets represent one thousands; long screws represent one hundreds; short screws represent tens, and nuts represent ones.

(1) 8 rivets 6 long screws 3 short screws 5 nuts = ___
- 4 long screws 2 short screws 7 nuts = ___
= ___

(2) 6 rivets 3 long screws 8 short screws 2 nuts = ___
- 1 long screw 7 short screws 7 nuts = ___

Part XIII, Exercise B (Continued)

(3) 2 rivets 9 long screws 5 short screws 8 nuts = ___
- 5 long screws 7 short screws 9 nuts = ___
= ___

(4) 7 rivets 5 long screws 3 short screws 9 nuts = ___
- 3 long screws 5 short screws 6 nuts = ___
= ___

(5) 9 rivets 2 long screws 6 short screws 3 nuts = ___
- 6 long screws 5 short screws 8 nuts = ___
= ___

(6) 3 rivets 4 long screws 2 short screws 6 nuts = ___
- 8 long screws 6 short screws 9 nuts = ___
= ___

(7) 5 rivets 7 long screws 1 short screw 4 nuts = ___
- 9 long screws 8 short screws 5 nuts = ___
= ___

(8) 4 rivets 1 long screw 4 short screws 5 nuts = ___
- 2 long screws 9 short screws 8 nuts = ___
= ___

(9) 1 rivet 4 long screws 6 short screws 2 nuts = ___
- 7 long screws 6 short screws 7 nuts = ___
= ___

Part XIII, Exercise B (Continued)

(10) 1 rivet 5 long screws 3 short screws 7 nuts = ___

- 5 long screws 2 short screws 9 nuts = ___

= ___

(11) 7 rivets 3 long screws 6 short screws 5 nuts = ___

- 6 long screws 9 short screws 8 nuts = ___

= ___

(12) 2,386 = __ rivets __ long screws __ short screws __ nuts

- 649 = __ long screws __ short screws __ nuts

__ rivets __ long screws __ short screws __ nuts

(13) 5,742 = __ rivets __ long screws __ short screws __ nuts

- 685 = __ long screws __ short screws __ nuts

__ rivets __ long screws __ short screws __ nuts

(14) 8,961 = __ rivets __ long screws __ short screws __ nuts

- 994 = __ long screws __ short screws __ nuts

__ rivets __ long screws __ short screws __ nuts

(15) 1,472 = __ rivet __ long screws __ short screws __ nuts

- 375 = __ long screws __ short screws __ nuts

__ rivet __ long screws __ short screws __ nuts

(16) 3,857 = __ rivets __ long screws __ short screws __ nuts

- 489 = __ long screws __ short screws __ nuts

__ rivets __ long screws __ short screws __ nuts

Part XIII, Exercise B (Continued)

(17) 6,538 = __ rivets __long screws __ short screws __ nuts
- 789 = __long screws __ short screws __ nuts
__ rivets __long screws __ short screws __ nuts

(18) 9,831 = __ rivets __long screws __ short screws __ nuts
- 958 = __long screws __ short screws __ nuts
__ rivets __ long screws __ short screws __ nuts

(19) 1,536 = __ rivets __long screws __ short screws __ nuts
- 587 = __long screws __ short screws __ nuts
__ rivets __long screws __ short screws __ nuts

(20) 1,752 = __ rivet __ long screws __ short screws __ nuts
- 653 = ___ long screws __ short screws __ nuts
__ rivet __ long screws __ short screws __ nuts

Part XIV Exercise A

The following are prices from the Car & Truck Appraisals book. Find the difference for each problem.

(1) 3,077 list price of 1977 Pinto Pony 2 door, 4 cylinder
- 2,625 market price

(2) 5,063 list price of 1977 Thunderbird V8
- 4,300 wholesale price

Part XIV, Exercise A (Continued)

(3) 2,025 market price of 1973 Oldsmobile 8 cylinder Cutlass Hard Top 2 Dr.

-1,520 wholesale price

(4) $6,524.00 list price of 1975 Oldsmobile 8 cylinder Toronado Custom Hard Top 2 door.

- 4,300.00 market price

(5) $2,800.00 market price 1976 Plymouth Valiant 6 cylinder Hard Top Scamp Special

- 2,325.00 wholesale price

(6) $3,950.00 market price 1977 Plymouth 8 cylinder Volare Sport Coupe 2 door

- 3,275.00 wholesale price

(7) $5,742.00 list price 1977 Ford LTD Pillar V8 Hard Top Landau 4 door

- 4,597.00

(8) $1,925.00 market price 1972 Pontiac 8 cylinder Firebird Sedan 2 door

1,445.00 wholesale price

(9) $3,499.00 list price 1976 Datsun Pick Up short bed

2,655.00 wholesale price

Find the difference between the market price and list price. Find the difference between the market price and loan price. Find the difference between the wholesale price and loan price.

Part XIV, Exercise A (Continued)

(10) $5,274.00 list price 1977 Mercury Cougar Hard Top 2 Door XR7

- 4,380.00 dealer cost.

Find the difference between the wholesale price and the list price.

Part XIV, Exercise B

Review of subtraction problems.

(1) 4 - 1
(2) 7 -3
(3) 5 -4
(4) 8 -2
(5) 9 -7

(6) 14 - 3
(7) 18 - 6
(8) 19 - 5
(9) 23 - 2
(10) 38 - 5

(11) 89 - 3
(12) 77 - 5
(13) 108 - 6
(14) 155 - 31
(15) 378 - 72

(16) 736 - 424
(17) 865 -762
(18) 628 -613
(19) 219 -117
(20) 908 -504

(21) 3,842 -1,512
(22) 5,608 -2,303
(23) 9,876 -8,842
(24) 8,069 -3,046
(25) 7,936 -7,914

Part XIV, Exercise C

Review of subtraction problems

(1) 36 (2) 21 (3) 52 (4) 75 (5) 98

-7 -4 -5 -8 -9

(6) 47 (7) 64 (8) 44 (9) 68 (10) 83

-19 -38 -35 -59 -65

(11) 357 (12) 459 (13) 739 (14) 928 (15) 563

-89 -79 -682 -739 -487

(16) 3,589 (17) 5,604 (18) 7,496 (19) 4,932 (20) 2,873

-782 -508 -6,878 -3,879 -1,999

Part XV, Exercise A

Addition and subtraction problems for calculator drill.

(1) 2 (2) 3 (3) 7 (4) 8 (5) 5

+8 +2 +5 +9 +8

(6) 9 (7) 7

-6 -4

(8) 8 + 7 + 5 = ___

(9) 6 + 8 + 3 = ___

(10) 9 + 7 + 4 = ___

(11) 7 + 8 - 5 = ___

(12) 5 + 8 - 7 = __

(13) 7 + 9 - 4 = __

(14) 9 - 3 + 5 = __

(15) 7 - 4 + 2 = __

Part XV, Exercise A (Continued)

(16) 18 - 6 + 9 = __ (17) 25 + 3 - 5 = __ (18) 93 + 7 - 2 = __

(19) 87 - 28 + 7 = __ (20) 53 + 15 - 8 = __

Part XV, Exercise B

Addition and subtraction problems for drill with calculator.

(1) 86
+ 53
- 7

(2) 357
+ 83
- 29

(3) 92
+745
- 87

(4) 897
- 469
+ 35

(5) 365
-283
+798

(6) 8,769
+1,232
- 968

(7) 532
+6,387
-2,493

(8) 3,576
+2,738
-4,287

(9) 402
+8,690
-7,999

(10) 618
+5,286
-5,904

(11) 8,759
-3,424
-5,335

(12) 9,583
-6,839
+2,357

(13) 38
+9,725
-4,986

(14) 63 + 586 + 1,879 - 689 = __

(15) 362 + 807 - 812 + 693 = __

(16) 9,683
-6,849
-1,967

(17) 4,803
-2,786
+1,381

(18) 6,802 - 2,503 + 7,986 - 9,491 = __

(19) 9,867 - 8,598 + 4,362 - 5,378 = __

(20) 382 + 1,657 - 1,897 = __

Part XV, Exercise C

Addition and subtraction problems for drill with calculator.

(1) $5.00 +7.00	(2) $8.00 +4.00	(3) $15.00 + 3.00	(4) $6.00 + 12.00	(5) $2.00 + 17.00
(6) $23.00 + 14.00	(7) $45.00 + 4.00	(8) $62.00 + 7.00	(9) $37.00 + 62.00	(10) $29.00 + 40.00
(11) $78.00 + 14.00	(12) $13.00 + 37.00	(13) $48.00 + 23.00	(14) $37.00 - 24.00	(15) $68.00 - 32.00
(16) $293.00 + 48.00	(17) $867.00 - 392.00	(18) $ 587.00 - 389.00	(19) $7,438.00 6,959.00	

(20) $5,896.00 list price & Extras Chev. Camaro

- 4,414.00 List price W/O Options

Part XVI Exercise A

Addition problems with decimals

(1) 1.3 +0.5	(2) 2.7 +4.2	(3) 6.5 +3.4	(4) 4.3 + 2.6	(5) 3.1 +6.8
(6) 8.2 +0.8	(7) 6.4 +1.7	(8) 5.8 +5.4	(9) 7.9 +6.7	(10) 9.8 +7.5

Part XVI, Exercise A (Continued)

(11) 34.3 + 8.7	(12) 65.8 + 7.5	(13) 78.6 +10.5	(14) 67.9 +25.7

(15) $43.80 Mechanic A made Monday
+ 38.20 Mechanic B made Monday

(16) $51.60 Mechanic C
+ 29.80 Mechanic D

(17) $45.70 Mechanic A made Tuesday
+ $42.30 Mechanic B made Tuesday

(18) $47.20 Mechanic C made Tuesday
+ 39.50 Mechanic D made Tuesday

(19) $43.80 Mechanic A made Monday
+ $45.70 Mechanic A made Monday

(20) $38.20 Mechanic B made Monday
+ $42.30 Mechanic B made Tuesday

Part XVI, Exercise B

Subtraction problems with decimals

(1) 0.8 -0.3	(2) 0.6 -0.4	(3) 0.68 -0.42	(4) 0.97 -0.74	(5) 0.83 -0.52
(6) 8.65 -6.32	(7) 9.87 -4.83	(8) 9.52 -7.28	(9) 8.47 -6.89	(10) 2.79 -1.93

Part XVI, Exercise B (Continued)

(11) .259 (12) 3.574 (13) 6.972

-.238 -1.587 -4.897

(14) .028 distributor point setting Car A

-.023 distributor point setting Car B

difference in point settings.

(15) .035 distributor point setting Car C

-.018 distributor point setting Car D

difference in point settings

(16) $327.50 week's salary for mechanic A

- 298.30 week's salary for mechanic B

more money made by mechanic A

(17) $262.70 week's salary for Mechanic C

- $195.50 week's salary for mechanic D

more money made by mechanic C

(18) $5,244.00 List New Buick Regal 8 cylinder

111.00 AM/FM radio

390.00 air conditioner

+ 43.00 tinted glass
TOTAL

- 4,355.00 Dealer Cost without accessories
Difference

Part XVI, Exercise B (Continued)

(19)

$11,396.00	List Price, Lincoln Mark V
- 8,799.00	Dealer's Cost

(20)

$293.58	Mr. Jones' bank statement at end of January
+468.29	Mr. Jones deposited February 6th
+792.31	Mr. Jones deposited February 9th
+653.82	Mr. Jones deposited February 12th
+537.27	Mr. Jones deposited February 22nd.
	Total deposited and end of January account
-1,693.78	Checks given by Mr. Jones during February.
	Total money in Mr. Jones' account at end of February

Part XVII, Exercise A

Use the calculator with the following addition problems

(1) The Happy Ford Company sold the following cars at these prices. Find the gross amount of sales.

$5,250.00	Thunderbird 1977
5,225.00	Ford Wagon LTD
5,375.00	Ford Wagon Squire
5,175.00	Ford LTD Pillard Landau Hard Top
	Total Gross

Part XVII, Exercise A (Continued)

(2) The Dodge Boys Company sold these cars.

$4,870.00	Royal Monaco 1977 Wagon Std.
4,750.00	Royal Monaco Hard Top 2 Door
5,200.00	Charger Hard Top 2 door
4,925.00	Monaco Wagon Crestwood 3 s.
4,250.75	Aspen Wagon Special Edition
4,900.83	Diplomat 4 door sedan
	Total Gross

(3) Grand Chevrolet Company sold the following cars:

$2,525.45	Chevette 2 D H Back
3,475.20	Monza H Back 2 + 2 4 cyl.
3,475.35	305 Monza V8 Towne Cpe 2D
3,425.50	Nova 6 cyl. Cpe 2D
4,275.85	Malibu Wagon Class 4D 2S
5,250.75	Monte Carlo Cpe Ld 2D 6 Pass
	Total Gross

(4) The Excellency Cadillac Company sold the following:

$9,150.75	Cadillac DeVille Sed 4 D 1977
10,100.35	Cadillac Eldorado Cpe.
11,150.40	Cadillac Fleetwood V8-350 Fuel Inj. Seville Sed. 4D
10,000.85	Cadillac Brougham 4D
	Total Gross

Part XVII, Exercise A (Continued)

(5) The Buick Agency sold these cars.

$4,050.75	Buick Skyhawk H Back 2 D Std V6-231
3,625.15	Buick Skylark Coupe 2D V6-231
4,010.35	Buick Skylark S Ed 4D S/R V6-231
4,175.60	Buick Century Sed 4D V6-231
4,753.25	Buick Regal Cpe 2D V6-231
4,875.85	Buick Regal Sed 4D V8-350
	Total Gross

(6) The Mercury Agency sold these cars.

$4,725.80	Mercury Marquis V8 H Top 2D
5,675.55	Mercury Marquis Bro H Top 4D
6,430.75	Mercury Marquis Grand H Top 2D
5,115.60	Mercury Cougar Wagon Villager 2S
4,925.33	Mercury Cougar Bro H Top 2D
4,250.64	Mercury Monarch Ghia Sed 2D
3,175.28	Mercury Comet Sed 2D 6 cyl Comet
	Total Gross

(7) The Imperial Lincoln Agency sold these cars

$11,325.75	Lincoln 1977 8 Cyl Versailes 4 D Sed
11,270.38	Lincoln Mark V 8 cyl 1977 Sed 2D
9,328.71	Lincoln Continental 8 cyl 1977, 4D Sed
7,839.62	Lincoln Continental 8 cyl 1976, Sed 4D
	Total Gross

Part XVII, Exercise A (Continued]

(8) Olds Oldsmobile Agency car sales

$3,925.87	Starfire 4 cyl 1977 Spt Cpe SX 2D
3,450.62	Omega 6 cyl 1977 F85 Cpe 2D
4,475.54	Omega 6 cly 1977 Sed 4D
4,725.32	Cutlass Colonnade Sup H Top Sed 4D
4,850.27	Delta Town Sed 6 cyl 4D
	Total Gross

(9) Indian Pontiac Dealership car sales

$2,575.87	Astro 4 cyl H Back 2D
3,225.68	Sunbird H Back 2D 6 cyl
3,575.36	Ventura 6 cyl Sed 4D
3,825.79	Phoenix 6 cyl Sed 4D
4,775.37	Firebird 8 cyl Esprit Cpe 2D
5,135.48	Bonneville Cpe 2D 8 cyl
	Total Gross

(10) The International Toyota Agency car sales

$2,950.00	Corolla KE 31L Sed 2D Cust 5 Spd
3,175.88	Corolla TE 31L Sed 4D Dex 4 Spd
3,786.74	Corolla TE 31L H Top 2D SR5 5 Spd
3,925.36	Corona RT Sed 4D Dlx 4 Spd
4,137.47	Corona H Top 2 D Sed Dlx 5 Spd
4,738.56	Celica RA Lift B 2D

Part XVII, Exercise B

Subtraction problems using market, list, and wholesale prices of cars.

(1) $3,248.00 Gremlin 4 Cyl. list price

-2,874.00 wholesale price

Dealer income

(2) $4,899.00 Matador 8 cyl. wagon 2S 4D

-4,116.00 wholesale price

Dealer income

(3) $4,549.00 List price 6 cyl Matador Sed 4D

-3,824.00 wholesale price

Dealer income

(4) $3,649.00 List price 6 cyl. Pacer Sed 2D

- 3,218.00 wholesale price

Dealer income

(5) $6,866.00 List price Buick 8 cyl Electra Sed 4D

-5,359.00 wholesale price

Dealer income

(6) $10,020.00 list price Cadillac 8 cyl. DeVille

- 7,719.00 dealer Cost

Dealer income

Part XVII, Exercise B (Continued)

(7) $8,648.00 list price Chevrolet 8 cyl. Corvette Cpe 2D

-8,350.00 market price

Difference dealer should allow

(8) $8,648.00 list price Chevrolet 8 cyl. Corvette Cpe 2D

- 6,749.00 dealer cost

Dealer income

(9) $8,350.00 Market price Chevrolet 8 cyl Corvette Cpe 2D

-6,749.00 Dealer cost

Dealer income from sale at market price.

(10) $3,935.00 list price 1977 Chevrolet Malibu 6 cyl. 4D Sed 6 Pass.

- 3,625.00 market price

Difference dealer should allow

Part XVIII, Exercise A

Addition and Subtraction drill problems

(1)	8	9	7	3	2	3	6
	+4	+3	+6	+8	+5	+7	+2

9 + 2 + 5 = ___

7 + 6 + 1 + 8 + 9 = ___

3 + 4 - 2 = ___

(2)	12	5	10	13	28	6	4	9	12
	+ 3	+17	+ 8	+7	+ 5	+39	+12	-6	-7

13 + 3 - 8 = ___

(3)	312	714	987	398	786
	- 8	+16	- 75	+ 69	-69

823 + 52 - 29 = ___

Part XVIII, Exercise A (Continued)

(4) 951 659 + 78 - 13 = ___ 392 + 42 + 9 + 36 = ___

- 83 783 + 91 + 27 + 74 = ___ 852 - 97 = ___

(5)	3,069	1,498	2,537	6,487	4,560	8,796
	+ 34	- 399	-638	+ 865	- 189	-688

2,389 + 38 + 189 = ___

Part XIX, Exercise A

Addition and subtraction combined into problems.

(1) $8,899.00 List price Oldsmobile Toronado
106.00 AM/FM radio list price
+ 446.00 Tempmatic list price
Total list price

$7,158.00 Market price Oldsmobile Toronado
100.00 AM/FM radio Mkt. Price
+ 425.00 Tempmatic market price
Total market price

_________ Total list price
- _________ Total market price
_________ Difference dealer may reduce price.

Part XIX Exercise A (Continued)

(2) $5,717.00 list price 8 cyl Ford Pillard LTD Land H top 2D
425.00 list price a/c
+ 110.00 cruise control
Total list price with equipment

$5,325.00 market price 8 cyl Ford Pillard LTD Land H Top 2D
275.00 market price a/c
+ 50.00 makret price cruise control
Total market price with equipment

_________ list price of car and equipment
- _________ market price of car and equipment
_________ difference the dealer may reduce price of car.

(3) $6,641.00 list price 1976 Chrysler New Yorker Brougham 8 cyl H Top 2D
425.00 a/c
60.00 cruise control
+ 100.00 stero w/tape
list price with equipment

$5,300.00 market price of car
350.20 wholesale price a/c
51.50 wholesale price cruise cont.
+ 103.00 wholesale price stero w/tape
total market price with extras at dealer cost.

Part XIX Exercise A (Continued)

________ list price with equipment

- ________ market price with equipment at dealer cost

________ difference dealer may reduce price.

(4) $4,870.00 list price 1977 Ford LTD II

195.00 power disc brakes

204.00 stero w/tape

564.00 a/c

+ 75.00 cruise control

list price with equipment

$4,375.00 market price

275.00 a/c

50.00 cruise contr.

85.00 stero w/tape

+ 50.00 power disc. brakes

market price w/equip.

________ list price w/equip.

- ________ market price w/equip.

____

Part XIX Exercise A (Continued)

(5) $3,449.00 Hornet 6 cyl. Sedan 4 D (used) 1977

250.00 a/c dealer cost

120.00 auto/trans. dealer cost

+ 35.00 cruise cont. dealer cost.

list price with dealer cost equip.

$3,150.00 market price

250.00 a/c market price

120.00 auto/trans. market price

+ 35.00 cruise control market price

market price with equipment

__________ list price with equipment

- __________ market price with equipment

__________ difference dealer can allow a customer

(6) $3,175.00 market price 1975 Camaro 8 cyl. model Q87

225.00 a/c

130.00 auto/trans.

30.00 cruise control

45.00 power brakes

65.00 power steer.

65.00 stero w/tape

Total market price with equip.

Part XIX Exercise A (Continued)

$2,220.00	loan price
180.00	a/c
105.00	auto/trans.
25.00	cruise cont.
35.00	pwr/brakes
50.00	pwr/steer.
50.00	stero w/tape
	Total loan price

________ total market price

- ________ total loan price

________ difference between sale price and price as loan collateral.

(7)	$4,976.00	List price 1978 new Dodge Diplomat
	95.00	White steel belted radial tires
	158.00	Automatic trans.
	248.00	AM/FM radio
	563.00	Air Cond.
	64.00	Tinted glass
	96.00	Cruise control
	91.00	rear window defroster
	+ 63.00	tilt steering column
		Total list price fully equipped

Part XIX Exercise A (Continued)

$4,900.00	1977 Mkt price 4D sedan
250.00	a/c
120.00	auto/trans.
35.00	cruise/control
45.00	tilt steering col.
	Total mkt. price of Dodge Diplomat (used) 1977

_________ List price of new 1978 Dodge Diplomat

- _________ Market price of used 1977 Dodge Diplomat

_________ Difference between new and used models one year apart in age.

(8)	$5,326.00	Impala List Price V8 engine Cpe. Ld. 2D 6 pass. list equip. 1977
	140.00	low mileage
	232.00	AM/FM radio
	569.00	air conditioning
	95.00	cruise/cont.
	70.00	Tilted steer. column
		List price on car & equip.

$4,725.00	Market price 1977 Impala
140.00	low mileage
50.00	cruise control market price
85.00	radio AM/FM
55.00	Tilted steering column
275.00	air/cond.

Part XIX Exercise A (Continued)

_________ list price

- _________ market price

_________ total difference that dealer may allow.

(9)	$4,948.00	Plymouth Gran Fury 8 cyl. Bro. Sed 4D list price
	313.00	auto/trans.
	162.00	Pwr/steer.
	563.00	Air/cond.
	64.00	tilted steer.
	96.00	cruise/control
		Total list price

$4,575.00	Market Price
145.00	Auto/trans.
275.00	a/c
85.00	pwr. steer.
50.00	cruise cont.
55.00	tilted steer.
	Total market price

_________ Total list price

- _________ Total market price

_________ Difference dealer could allow

Part XIX Exercise A (Continued)

(10) Optional equipment of Buick Century

List Price

$ 307.00	auto/trans.
152.00	pwr./steer.
69.00	pwr/brakes
236.00	AM/FM radio
544.00	a/c
62.00	Tinted glass
90.00	cruise cont.
92.00	rear window defog.
	Total list equip.

Dealer Cost

$ 220.00	auto/trans.
107.00	pwr/steer.
49.00	pwr/brakes
111.00	AM/FM radio
390.00	a/c
43.00	tinted glass
63.00	cruise cont.
38.00	rear window defog.
	Total dealer cost equip.

Part XIX Exercise A (Continued)

__________ Total list

- __________ Total Dlr. Cost

__________ Total difference of optional equipment.

Part XIX, Exercise B

Addition of fractions with the same denominator.

(1) 1/2 + 1/2 = 1/2
+ 1/2

(2) 2/4 + 2/4 = 2/4
+ 2/4

(3) 1/3 + 1/3 = 1/3
+ 1/3

(4) 1/3 + 1/3 + 1/3 = 1/3
1/3
+ 1/3

(5) 1/4 + 2/4 = 1/4
+ 2/4

(6) 2/4 + 1/4 = 2/4
+ 1/4

(7) 1/3 + 2/3 = 1/3
+ 2/3

(8) 2/5 + 1/5 = 2/5
+ 1/5

(9) 1/5 + 2/5 + 2/5 = 1/5
2/5
+ 2/5

(10) 1/10 + 3/10 + 4/10 + 1/10 =

(11) 2/9 + 3/9 + 4/9 =

(12) 2/9 + 3/9 + 4/9 + 1/9 =

Part XIX, Exercise B (Continued)

(13) 2/7 + 1/7 + 3/7 =

(14) 5/100 + 20/100 + 50/100 = 19/100 =

(15) 3/1,000 + 52/1,000 + 228/1,000 =

(16) 803/1,000 + 21/1,000 + 38/1,000 + 57/1,000 =

(17) 83/10,000 + 320/10,000 + 672/10,000 + 98/10,000 + 1,176/10,000 =

(18) 3/50 + 23/50 + 17/50 + 8/50 =

(19) 3/140 + 38/140 + 79/140 + 10/140 =

(20) 3/17 + 12/17 + 1/17 =

Part XIX, Exercise C

Add simple fractions having different denominators. To change the denominator of these fractions, double the numerator and denominator, of the smaller denominator until all of the denominators are the same.

(1) 1/2 + 1/4 =

(2) 2/3 + 3/6 =

(3) 3/5 + 5/10 =

(4) 3/4 + 1/8 =

(5) 2/7 + 5/14 + 2/14 =

(6) 5/12 + 1/6 + 3/6 =

(7) 1/3 + 1/6 + 1/3 =

(8) 1/6 + 2/6 + 3/12 =

(9) 2/9 + 4/9 + 2/18 =

(10) 1/10 + 1/5 + 1/5 + 2/5 =

Part XX Exercise A

Subtracting problems with same denominators.

(1) 2/3 - 1/3 = (2) 3/4 - 2/4 = (3) 7/8 - 4/8 =

(4) 7/9 - 3/9 = (5) 4/4 - 1/4 = (6) 10/4 - 7/4 =

(7) 4/5 - 3/5 = (8) 7/9 - 2/9 = (9) 5/8 - 3/8 =

(10) 9/10 - 6/10 =

Part XX, Exercise B

Subtract simple fractions that have different denominators by doubling the numerator and denominator of the fraction with the smaller denominator so the denominators are the same for all fractions.

(1) 3/4 - 1/2 = (2) 2/3 - 1/6 = (3) 1/4 - 1/8 =

(4) 4/5 - 3/10 = (5) 7/10 - 1/5 = (6) 1/2 + 1/4 - 2/4 =

(7) 5/6 - 7/12 = (8) 1/3 + 1/3 - 2/6 = (9) 6/9 + 11/18 + 2/9 - 13/18 =

(10) 1/4 + 2/8 + 3/8 - 4/8 =

Part XXI Exercise A

Addition and subtraction of fractions

(1) 3/10 + 4/10 = (2) 3/4 + 1/4 = (3) 4/13 + 7/13 =

Part XXI, Exercise A (Continued)

(4) 2/9 + 1/9 + 3/9 = (5) 1/2 + 1/2 = (6) 1/7 + 3/7 =

(7) 2/14 + 3/14 + 1/14 + 4/14 = (8) 2/23 + 11/23 + 3/23 + 9/23 =

(9) 3/11 + 2/11 + 1/11 = (10) 6/27 + 7/27 + 2/27 + 3/27 =

(11) 3/4 - 1/4 = (12) 2/3 - 1/3 = (13) 4/5 - 2/5 =

(14) 2/33 + 5/33 + 12/33 - 8/33 =

(15) 18/100 + 6/100 + 29/100 + 32/100 - 48/100 =

(16) 311/1,000 + 248/1,000 + 408/1,000 - 787/1,000 =

(17) 17/10,000 + 398/10,000 + 8,017/10,000 - 6,594/10,000 =

(18) 523/10,000 + 461/10,000 + 1,300/10,000 + 2,469/10,000 - 2,157/10,000 =

(19) 3/12 + 5/12 + 3/12 - 7/12 = (20) 3/10 + 5/10 + 7/10 - 12/10 =

Part XXI, Exercise B

Solve addition and subtraction problems having fractions of different denominators. Keep adding the both parts of the fraction of the least denominator to itself, until its denominator becomes the same as the fraction with the largest denominator.

Part XXI, Exercise B (Continued)

Example: 1/3 + 1/9 = 1/3 + 1/3 + 1/3 + 1/9 = 3/9 + 1/9 = 4/9

(1) 2/5 + 2/10 = (2) 1/3 + 3/6 = (3) 1/2 + 1/6 =

(4) 1/3 + 1/2 + 1/6 = (5) 2/3 + 1/6 = (6) 3/4 - 2/8 =

(7) 3/4 - 7/12 = (8) 1/3 + 1/4 - 5/12 = (9) 5/6 + 1/3 - 1/2 =

(10) 1/2 + 2/5 - 3/10 = (11) 3/6 + 1/3 - 2/9 - 4/18 =

(12) 3/4 + 1/8 - 7/16 = (13) 1/4 + 1/3 + 1/2 - 5/12 - 1/6 =

(14) 2/3 + 1/5 - 11/15 = (15) 3/10 + 3/25 + 7/50 - 27/100 =

Part XXII Exercise A

Addition and subtraction problems with decimals for drill with the calculator.

(1) 1.3 (2) 3.4 (3) 5.6 + 1.4 = (4) 2.2 (5) 1.8 + .2 =
+ .1 + .2 + 5.3

(6) 2.1 (7) 5.7 - 1.2 = (8) 3.5 - 2.3 = (9) 8.7
1.3 - .2
+ 4.5

Part XXII, Exercise A (Continued)

(10) 3.4 (11) 6.2 - .2 = (12) 4.3 - .4 = (13) 1.2 - .8 =
- 0.3

(14) 5.6 - 3.4 = (15) 7.8 - 5.9 = (16) 10.5 - 2.3 =

(17) 21.3 - 5.7 = (18) 14.7 - 7.8 = (19) 53.4 - 27.8 =

(20) 13.4 + 8.2 + .7 - 9.8 = (21) 21.23 + 3.85 + .61 =

(22) $5.82 + $3.76 + $18.92 + $212.48 = (23) $352.63 + $578.42 =

(24) $892.52 + $397.08 + $506.07 =

(25) $615.15 + $728.13 + $497.08 + $989.17 =

(26) $492.13 - $209.48 = (27) .023 + .015 = (28) .032 - .012 =

(29) .028 - .017 = (30) .035 + .148 + 3.008 + 5.726 + 29.903 + 432.009 =

Part XXII, Exercise B

Adding and Subtracting problems with mixed denominators.

(1) 2/3 + 1/6 = (2) 3/4 + 3/8 = (3) 3/5 - 4/10 =

(4) 3/8 - 5/16 = (5) 5/7 - 4/14 = (6) 2/3 + 1/4 - 5/12 =

Part XXII, Exercise B (Continued)

(7) 5/12 + 7/24 = (8) 13/16 - 3/32 = (9) 4/9 + 5/18 - 4/6 =

(10) 1/4 + 3/8 + 3/16 - 10/32 = (11) 3/5 + 1/5 + 1/3 - 14/15 =

(12) 7/15 + 4/15 - 2/5 - 1/3 = (13) 1/4 + 1/3 + 1/6 - 9/12 =

(14) 3/12 + 1/2 + 1/4 - 2/3 = (15) 5/12 + 5/24 + 1/3 - 1/2 =

(16)	2/3	(17)	1/4	(18)	3/100	(19)	873/1,000
	2/9		1/2		7/10		- 128/1,000
	+ 1/18		- 3/8		- 1/25		

(20) 343/1,000

+ 23/500

- 176/1,000

Part XXIII Exercise A

Multiplication problems of two digits multiplied by one digit

(1)	10	10 X 1 =	(2)	10	10 X 2 =	(3)	11	11 X 2 =
	X 1			X 2			X 2	
(4)	12	12 X 2 =	(5)	11	11 X 3 =	(6)	10	10 X 3 =
	X 2			X 3			X 3	

Part XXIII, Exercise A (Continued)

(7) 12   12 X 3 =   (8) 20   20 X 4 =   (9) 21   21 X 4 =

X 3   X 4   X 4

(10) 21   21 X 2 =   (11) 23   23 X 2 =   (12) 23   23 X 3 =

X 2   X 2   X 3

(13) 23   23 X 4 =   (14) 20   20 X 5 =   (15) 22   22 X 5 =

X 4   X 5   X 5

(16) 21   21 X 5 =   (17) 12   12 X 5 =   (18) 10   10 X 5 =

X 5   X 5   X 5

(19) 23   23 X 5 =   (20) 24   24 X 5 =   (21) 31   31 X 6 =

X 5   X 5   X 6

(22) 36   36 X 6 =   (23) 47   47 X 6 =   (24) 63   63 X 7 =

X 6   X 6   X 7

(25) 67   67 X 7 =   (26) 74   74 X 8 =   (27) 83   (28) 92

X 7   X 8   X 8   X 8

(29) 98   (30) 89

X 9   X 7

Part XXIII, Exercise B

Multiplying two digits by two digits

(1) 10 10 X 10 = (2) 11 11 X 10 = (3) 11 11 X 11 =

X 10 X10 X 11

(4) 21 21 X 12 (5) 23 23 X 12 = (6) 34 34 X 13 =

X 12 X 12 X 13

(7) 42 42 X 21 = (8) 41 41 X 32 = (9) 43 43 X 25 =

X 21 X 32 X 25

(10) 45 45 X 53 = (11) 67 X 23 = (12) 76 X 43 =

X 53

(13) 86 X 57 = (14) 78 X 62 = (15) 59 X 67 = (16) 97 X 48 =

(17) 89 X 73 = (18) 95 X 84 = (19) 69 X 62 = (20) 94 X 47 =

Part XXIV, Exercise A

Multiplying three digits by one digit for drill with the calculator.

(1) 100 (2) 210 (3) 121 (4) 312 (5) 213 (6) 234

X 1 X 2 X 3 X 4 X 3 X 4

(7) 243 (8) 524 (9) 245 (10) 254 (11) 253 (12) 514

X 2 X 2 X 5 X 3 X 6 X 6

Part XXIV, Exercise A (Continued)

(13) 635 X 4
(14) 645 X 3
(15) 476 X 4
(16) 674 X 3
(17) 746 X 2
(18) 837 X 2

(19) 378 X 3
(20) 738 X 5
(21) 279 X 8
(22) 793 X 6
(23) 849 X 9
(24) 638 X 9

(25) 547 X 9
(26) 497 X 8
(27) 869 X 7
(28) 749 X 7
(29) 689 X 7
(30) 547 X 7

Part XXIV, Exercise B

Multiply three digits by two digits

(1) 111 X 10
(2) 121 X 11
(3) 112 X 12
(4) 312 X 23
(5) 423 X 31
(6) 415 X 32

(7) 542 X 33
(8) 354 X 24
(9) 534 X 45
(10) 253 X 54
(11) 436 X 25
(12) 653 X 46

(13) 563 X 63
(14) 476 X 56
(15) 746 X 37
(16) 473 X 57
(17) 587 X 64
(18) 879 X 93

(19) 789 X 49
(20) 698 X 59

Part XXIV, Exercise C

Multiplying one digit numerals with decimal numerals in the tenths position.

Part XXIV, Exercise C (Continued)

(1) 2 2 X .1 =
X .1

(2) 1 1 X .2 =
X .2

(3) 2 2 X .3 =
X .3

(4) 2 2 X .2 =
X .2

(5) 4 4 X .2 =
X .2

(6) 4 4 X .1 =
X .1

(7) 4 4 X .3 =
X .3

(8) 4 4 X .4 =
X .4

(9) 3 3 X .3 =
X .3

(10) 5 5 X .2 =
X .2

(11) 5 5 X .4 =
X .4

(12) 5 5 X .3 =
X .3

(13) 6 6 X .5 =
X .5

(14) 6 6 X .3 =
X .3

(15) 6 6 X .4 =
X .4

(16) 8 8 X .4
X .4

(17) 8 8 X .6 =
X .6

(18) 8 8 X .3 =
X .3

(19) 9 9 X .3 =
X .3

(20) 9 9 X .5 =
X .5

(21) 9 9 X .6 =
X .6

(22) 9 9 X .4 =
X .4

(23) 9 9 X .2 =
X .2

(24) 7 7 X .4 =
X .4

Part XXIV, Exercise C (Continued)

(25) 3 3 X .7 =
X .7

(26) 5 5 X .8 =
X .8

(27) 4 4 X .6 =
X .6

(28) 3 3 X .9 =
X .9

(29) 5 5 X .9 =
X .9

(30) 7 7 X .8 =
X .8

Part XXIV, Exercise D

Multiplying two digits by decimal numerals in the tenths position, using examples of mechanics time in tenths of an hour and wage scale per hour.

(1) $11.00 wage per hour
X .1 of an hour

(2) $10.00 wage per hour
X .2 of an hour

(3) $21.00 wage per hour
X .3 of an hour

(4) $12.00 wage per hour
X .3 of an hour

(5) $31.00 wage per hour
X .4 of an hour

(6) $32.00 wage per hour
X .2 of an hour

(7) $35.00 wage per hour
X .4 of an hour

(8) $45.00 wage per hour
X .2 of an hour

(9) $54.00 wage per hour
X .5 of an hour

(10) $63.00 wage per hour
X .5 of an hour

Part XXIV, Exercise D (Continued)

(11) $57.00 wage
X .4 hour

(12) $76.00 wage
X .3 hour

(13) $48.00 wage
X.7 hour

(14) $84.00 wage
X .4 hour

(15) $59.00 wage
X .6 hour

(16) $92.00 wage
X.8 hour

(17) $39.00 wage
X .7 hour

(18) $29.00 wage
X .8 hour

(19) $97.00 wage
X.2 hour

(20) $87.00 wage
X .7 hour

(21) $78.00 wage
X .6 hour

(22) $47.00 wage
X.5 hour

(23) $27.00 wage
X .9 hour

(24) $63.00 wage
X .9 hour

(25) $67.00 wage
X.8 hour

Part XXV, Exercise A

Multiplying two digits by decimal numerals in the tenths place. Examples of mechanics and administrators hour and salary scale with times measured in tenths.

(1) $98.00 wage per hour
X .1 of an hour

(2) $22.00 wage per hour
X .2 of an hour

(3) $31.00 wage
X .2 hour

(4) $32.00 wage
X .3 hour

(5) $43.00 wage
X .3 hour

Part XXV, Exercise A (Continued)

(6) $25.00 wage
X .2 hour

(7) $26.00 wage
X .4 hour

(8) $35.00 wage
X .4 hour

(9) $54.00 wage
X .5 hour

(10) $53.00 wage
X .3 hour

(11) $46.00 wage
X .5 hour

(12) $75.00 wage
X .6 hour

(13) $38.00 wage
X .6 hour

(14) $84.00 wage
X .5 hour

(15) $59.00 wage
X .7 hour

(16) $38.00 wage
X .7 hour

(17) $49. wage
X .7 hour

(18) $67. wage
X .4 hour

(19) $76. wage
X .5 hour

(20) $94. wage
X .6 hour

Part XXV, Exercise B

Multiply three digits by decimal numerals in the tenths place.

(1) 213
X.1

(2) 302
X.2

(3) 435
X.3

(4) 254
X.4

(5) 325
X.4

(6) 635
X.2

(7) 465
X.3

(8) 736
X.5

(9) 476
X.5

(10) 523
X.4

(11) 534
X.6

(12) 657
X.5

(13) 867
X.6

(14) 749
X.4

(15) 869
X.3

(16) 937
X.6

(17) 759
X.7

(18) 359
X.9

Part XXV, Exercise B (Continued)

(19) 693	(20) 978	(21) 963	(22) 487	(23) 234
X.8	X.9	X.8	X.8	X.9

(24) 487	(25) 396
X.6	X.7

Part XXV, Exercise C

Multiply three digit numerals by numerals in the tenths place.

(1) 852	(2) 734	(3) 196	(4) 615	(5) 429	(6) 348
X.3	X.2	X.4	X.5	X.6	X.7
(7) 257	(8) 653	(9) 645	(10) 738	(11) 594	(12) 374
X.8	X.9	X.3	X.2	X.4	X.5
(13) 528	(14) 398	(15) 627	(16) 475	(17) 354	(18) 987
X.7	X.6	X.9	X.8	X.7	X.2

(19) 879	(20) 698
X.3	X.4

Part XXV, Exercise D

Multiply four digit numerals by numerals in the tenths place.

(1) 2131	(2) 1432	(3) 1352	(4) 3042	(5) 5243
X .2	X .4	X .3	X .5	X .6

Part XXV, Exercise D (Continued)

(6)	4205	(7)	2436	(8)	3264	(9)	5462	(10)	6183
	X .3		X .4		X .7		X .4		X .5
(11)	4357	(12)	3924	(13)	4587	(14)	3425	(15)	2468
	X .6		X .7		X .8		X .8		X .9
(16)	9384	(17)	3972	(18)	8794	(19)	9623	(20)	9861
	X .9		X .2		X .3		X .8		X .6

Part XXVI, Exercise A

Multiplying three digit numerals by a numeral in the tenths place. Consider as examples of discounts on automobile accessories.

(1) $263 auto/trans. Ford Pinto
X.8 dealer cost multiplier
dealer cost

(2) $478 a/c A M C Concord
X.8 dealer cost multiplier
dealer cost

(3) $153 power steer. Buick
X.7 dealer cost multiplier
dealer cost

(4) $238 AM/FM Radio Chevrolet/Monza
X.8 dealer cost multiplier
dealer cost

(5) $495 a/c Ford Granada
X.8 dealer cost multiplier
dealer cost

(6) $307 auto/trans. Pontiac
X.6 dealer cost multiplied
dealer cost

Part XXVI, Exercise A (Continued)

(7) $189 AM/FM Radio Chrylser
X.5 dealer cost multiplier
dealer cost

(8) $542 A/C Ford Thunderbird
X.4 dealer cost multiplier
dealer cost

(9) $569 A/C Chevrolet
X.3 dealer cost multiplier
dealer cost

(10) $579 A/C Mercury Marquis
X.2 dealer cost multiplier
dealer cost

Part XXVI, Exercise B

Multiply four digits by one digit in tenths place. Consider these problems as examples not genuine amounts of car prices.

(1) $4357. Buick LeSabre 4D Sed.
X.2 rate of dealer profit

(2) $5028. Dealer Cost Buick Estate Wagon 4D
X.3 rate
dealer profit (this would be more than the profit allowed in the list price.

(3) $5678. List price Chevrolet Monte Carlo
X.4 discount rate
sale price (a big bargain)

(4) $8420. List price Thunderbird Landau
X.5 rate
half price sale

Part XXVI, Exercise B (Continued)

(5) $1235. optional equipment
X.6 discount rate
dealer cost

(6) $2167. optional equipment
X.7 discount rate
dealer cost

(7) $1798. optional equipment
X.8 discount rate
dealer cost

(8) $2879 optional equipment
X.9 discount rate
dealer cost

(9) $ 786. dealer cost of accessories
.3 rate increase
dealer charge for accessories

(10) $ 694. dealer cost of accessories
.2 rate increase
dealer charge for accessories

Part XXVII, Exercise A

Multiplying one digit by two or more digits with one of the two digits in the tenths place.

(1) 3	(2) 2	(3) 5	(4) 4	(5) 1
X 1.2	X 3.4	X 2.3	X 4.5	X 5.1
(6) 7	(7) 6	(8) 7	(9) 8	(10) 9
X 3.6	X 2.6	X 6.7	X 8.7	X 8.9
(11) 9	(12) 8	(13) 7	(14) 6	(15) 7
X 2.1	X 3.2	X 4.3	X 5.4	X 6.2
(16) 5	(17) 4	(18) 3	(19) 9	(20) 8
X 7.6	X 7.8	X 9.8	X 8.9	X 7.9

Part XXVII, Exercise B

Multiplying two digits by two digits with one digit in the tenths place.

(1) 34	(2) 87	(3) 69	(4) 74	(5) 85
X 2.1	X 4.2	X 3.5	X 6.3	X 7.4
(6) 93	(7) 28	(8) 39	(9) 64	(10) 53
X 2.5	X 9.6	X 8.7	X 5.4	X 8.3

Part XXVII, Exercise C

Multiplying one digit times two or more digits with one digit in the tenths place.

Part XXVII, Exercise C (Continued)

(1) 4 (2) 2 (3) 3 (4) 5 (5) 6
X 2.3 X 11.4 X 4.5 X 24.3 X 134.2

(6) 7 (7) 9 (8) 8 (9) 7 (10) 9
X 240.6 X 524.7 X 683.7 X 54.9 X 305.6

(11) 7 (12) 6 (13) 5 (14) 4 (15) 3
X 540.8 X 682.4 X 1870.3 X 200.5 X 502.4

(16) 2 (17) 6 (18) 7 (19) 4 (20) 5
X 989.7 X 548.6 X 682.9 X 3070.9 X 913.8

Part XXVII, Exercise D

Multiply three digits times two or more digits with one digit in the tenth place.

(1) 321 (2) 452 (3) 243 (4) 345 (5) 405
X 4.3 X 3.2 X 5.1 X 31.2 X 64.5

(6) 375 (7) 698 (8) 786 (9) 957 (10) 489
216.4 324.5 429.7 702.6 580.9

(11) 874 (12) 578 (13) 293 (14) 649 (15) 825
663.5 247.7 301.8 268.8 497.9

Part XXVIII, Exercise A

Multiply one digit by one digit in the hundredths place

(1) 2 X .02 =　　(2) 5 X .04 =　　(3) 4 X .03 =

(4) 8 X .01 =　　(5) 7 X .05 =　　(6) 6 X .07 =

(7) 9 X .06 =　　(8) 5 X .06 =　　(9) 6 X .08 =

(10) 8 X .04 =　　(11) 7 X .09 =　　(12) 4 X .07 =

(13) 9 X .03 =　　(14) 5 X .08 =　　(15) 7 X .06 =

(16) 3 X .09 =　　(17) 2 X .06 =　　(18) 5 X .07 =

(19) 8 X .09 =　　(20) 9 X .07 =

Part XXVIII Exercise B

Multiply two or more digits times one digit in the hundredths place.

Example discounts are included.

(1) 23　　(2) 46　　(3) 45　　(4) 35　　(5) 67
X .02　　X .01　　X .03　　X .04　　X .05

(6) 84　　(7) 29　　(8) 76　　(9) 98　　(10) 87
X .03　　X .06　　X .07　　X .08　　X .09

Part XXVIII, Exercise B (Continued)

(11) $126. Steel belted radial tires, Ford Fairmont

X .07 per cent discount

discount amount

(12) $316. auto/trans Buick Opal

X .08 per cent discount

discount amount

(13) $152. Pwr steer. Chev. Nova

X .06 per cent discount

discount amount

(14) $508. A/C Pontiac Firebird

X .05 per cent discount

amount of discount

(15) $198. Steel belted radials, AMC Matador

X .04 per cent discount

amount of discount

Part XXVIII, Exercise C

Solve problems with two or more digits multiplied by one digit in the hundredths place.

(1)	(2)	(3)	(4)	(5)
31	14	22	30	43
X .02	X .01	X .04	X .05	X .03

Part XXVIII, Exercise C (Continued)

(6) 28 X .06	(7) 47 X .08	(8) 59 X .07	(9) 84 X .03	(10) 96 X .02
(11) 78 X .09	(12) 62 X .09	(13) 48 X .05	(14) 37 X .07	(15) 73 X .08
(16) 36 X .04	(17) 93 X .06	(18) 48 X .06	(19) 74 X .09	(20) 29 X .07

Part XXIX, Exercise A

Solve the following multiplication problems

(1) 2 X .12	(2) 3 X .24	(3) 4 X .32	(4) 5 X .41	(5) 3 X .54
(6) 6 X .35	(7) 8 X .72	(8) 9 X .48	(9) 7 X .56	(10) 9 X .37
(11) .78 X 6	(12) .93 X 4	(13) .57 X 8	(14) .29 X 5	(15) .84 X 7
(16) .59 X 2	(17) .47 X 4	(18) .98 X 3	(19) .87 X 8	(20) .38 X 6

Part XXIX, Exercise B

Multiply two or more digits times two digits in the hundredths place.

Part XXIX, Exercise B (Continued)

Some problems are examples of finding dealer costs of optional equipment of cars.

(1) 11	(2) 13	(3) 42	(4) 15	(5) 54
X .12	X .31	X .24	X .43	X .52
(6) 67	(7) 85	(8) 29	(9) 92	(10) 78
X .83	.46	.42	.64	.53
(11) 34	(12) 89	(13) 95	(14) 78	(15) 93
X .94	X .17	X .63	X .61	X .28

(16) $126. steel belted radial tires Ford Fairmont
X .85 dealers cost multiplier
dealer cost

(17) $294. auto/trans. AMC Gremlin
X .83 deal. cost multiplier
dealer cost

(18) $307. auto/trans. Chev. Malibu
X .78 deal. cost multiplier
dealer cost

(19) $563. A/C Dodge Magnum
X .76 dealer cost multiplier
dealer cost

Part XXIX, Exercise B (Continued)

(20) $563. A/C Plymouth Fury

X .76 Dealer cost multiplier

dealer cost.

(21) $263. auto/trans. Ford Pinto

X .15 dealer discount %

amount discounted to dealer

(22) $307. auto/trans. Pontiac Grand Prix

X .22 discount per cent

amount discounted to dealer

(23) $569. A/C Chevrolet Impala

X .23 discount per cent

discounted to dealer

(24) $162. power steering Dodge Monaco

X .24 discount per cent

discount to dealer

(25) $396. A/C Plymouth Arrow

X .17 discount per cent

discount to dealer

(26) Example of simple interest payment for one year on a car loan.

Part XXIX, Exercise B (Continued)

$5,896. loaned for a new Chevrolet Camaro, loaded
X .12 per cent interest on the loan
interest

Part XXX, Exercise A

Multiply one or more digits by two digits in the hundredths place.

(1) 3 X .21
(2) 5 X .23
(3) 4 X .31
(4) 7 X .42
(5) 9 X .51

(6) 78 X .32
(7) 96 X .45
(8) 57 X .61
(9) 38 X .27
(10) 94 X .39

(11) $316. auto/trans. Buick Opel
X .83 dealer cost multiplier
cost to dealer

(12) $307. auto/trans. Chev. Nova
X .78 dealer cost multiplier
cost to dealer

(13) $607. A/C Chrysler Newport
X .75 dealer cost multiplier
cost to dealer.

(14) $1,249. Options Pontiac Bonneville
X .77 dealer cost multiplier
dealer cost of options

Part XXX, Exericse A (Continued)

(15) $1,169. Options Ford LTD II
X .78 dealer cost multiplier
options at dealer cost

(16) Interest for one year on a car loan.
$5,409. Plymouth Volare at list price loaded
X .12 per cent interest
amount of interest for one year.

(17) $6,123. Pontiac Le Mans loaded @ list price
X .14 per cent interest
amount of interest for one year

(18) $5,934. Ford LTD II list price loaded
X .13 per cent interest
interest for one year

(19) $6,872. Chrysler Cordoba loaded list price
X .15 interest per cent
interest due for one year

(20) $8,309. Oldsmobile 98 loaded list price
X .18 per cent interest
interest for one year

Part XXX, Exercise B

Multiply one or more digits by three digits with two of the three digits in the hundredths place.

(1) 3 (2) 5 (3) 4 (4) 5 (5) 2
X 1.23 X 4.13 X 5.42 X 3.24 X 4.52

(6) 67 (7) 78 (8) 69 (9) 86 (10) 95
X 5.32 X 4.36 X 2.71 X 7.26 X 8.76

(11) 365 (12) 467 (13) 803 (14) 419 (15) 827
X 2.43 X 5.42 X 3.69 X 6.27 X 9.73

(16) 2,134 (17) 3,524 (18) 6,872 (19) 8,935 (20) 9,678
X 5.12 X 4.35 X 2.96 X 7.82 X 5.34

Part XXXI, Exercise A

Multiply one or more digits by three digits with two of the three digits in the hundredths place.

(1) 2 (2) 4 (3) 5 (4) 3 (5) 1
X 2.13 X 3.42 X 4.31 X 2.52 X 5.44

(6) 46 (7) 73 (8) 59 (9) 98 (10) 69
X 4.32 X 5.16 X 3.72 X 5.64 X 8.79

(11) 382 (12) 945 (13) 728 (14) 687 (15) 963
X 4.15 X 6.23 X 9.67 X 5.93 X 7.28

Part XXXI, Exercise A (Continued)

(16) 2,845 (17) 4,735 (18) 8,726 (19) 2,934 (20) 6,139

X 6.32 X 4.86 X 9.45 X 7.58 X 6.84

Part XXXI, Exercise B

Multiply one digit with 4 digits, two of which are in the hundredths place.

(1) 3 (2) 2 (3) 5 (4) 6 (5) 4

X 25.14 X 35.24 X 43.12 X 51.43 X 14.25

(6) 8 (7) 9 (8) 7 (9) 2 (10) 3

X 63.54 X 21.83 X 49.68 X 98.79 X 68.79

(11) 58.32 (12) 76.98 (13) 84.37 (14) 92.86 (15) 69.78

X 8 X 5 X 6 X 7 X 9

(16) 29.34 (17) 83.57 (18) 95.48 (19) 89.97 (20) 71.89

X 5 X 4 X 2 X 3 X 6

Part XXXI, Exercise C

Multiply one or more digits with three digits and zero with a zero or two numerals in the hundredths place.

(1) 4 (2) 3 (3) 5 (4) 2 (5) 7

X 31.02 X 42.33 X 14.03 X 20.35 X 41.09

(6) 9 (7) 6 (8) 9 (9) 8 (10) 7

X 32.06 X 48.32 X 69.87 X 76.02 X 53.62

Part XXXI, Exercise C (Continued)

(11) 69.13 (12) 46.85 (13) 18.29 (14) 29.74 (15) 83.47
X 3 X 7 X 6 X 8 X 5

(16) 78.49 (17) 68.35 (18) 26.79 (19) 43.86 (20) 29.75
X 4 X 7 X 8 X 9 X 2

Part XXXI, Exercise D

Multiply one to three digits with three digits, two of which are in the hundredths place or zero with one digit in the hundredths place.

(1) 2 (2) 3 (3) 5 (4) 4 (5) 3
X 2.13 X 4.12 X 3.14 X 3.02 X 5.04

(6) 8 (7) 9 (8) 6 (9) 7 (10) 8
X 4.06 X 7.03 X 5.47 X 8.09 X 7.46

(11) 26 (12) 74 (13) 59 (14) 73 (15) 97
X 3.15 X 8.21 X 4.67 X 3.82 X 6.09

(16) 325 (17) 813 (18) 419 (19) 748 (20) 903
X 4.02 X 7.34 X 5.26 X 3.09 X 8.04

Part XXXII, Exercise A

Multiply one digit with three digits in the thousandths place. Example problems include the diameter of a valve in thousandths of an inch multiplying with a given number of valves.

Part XXXII, Exercise A (Continued)

(1) 3 intake valves

X .372 diameter of one valve American Motors Car
inches of diameter

(2) 2 intake valves

X .371 diameter one valve of Plymouth
inch of diameter

(3) 4 intake valves

X .342 diameter of valve of Thunderbird
inches of diameter

(4) 5 exhaust valves

X .351 diameter of valve of Volkswagen
inches of diameter

(5) 4 (6) .692 (7) .748 (8) .926 (9) .489
X .524 X 5 X 7 X 6 X 9

(10) .796
X 8

Part XXXII, Exercise B

Multiply one or more digits with three digits in the thousandths place.

(1) 3 (2) 5 (3) 4 (4) 2 (5) 3
X .231 X .432 X .532 X .514 X .243

Part XXXII, Exercise B (Continued)

(6) 34 X .514	(7) 25 X .423	(8) 53 X .525	(9) 42 X .254	(10) 23 X .513
(11) 623 X .714	(12) 487 X .619	(13) 869 X .735	(14) 517 X .923	(15) 681 X .519
(16) 275 X .238	(17) 945 X .386	(18) 428 X .746	(19) 674 X .846	(20) 829 X .958

Part XXXII, Exercise C

Multiply one or more digits with two digits and zero in the thousandths place.

(1) 5 X .015	(2) 3 X .205	(3) 2 X .403	(4) 4 X .501	(5) 5 X .402
(6) 38 X .052	(7) 64 X .402	(8) 39 X .603	(9) 48 X .804	(10) 69 X .507
(11) 248 X .203	(12) 539 X .402	(13) 731 X .607	(14) 845 X .073	(15) 629 X .048
(16) 479 X .705	(17) 986 X .604	(18) 2,543 X . .908	(19) 6,578 X . .053	(20) 9,342 X .807

Part XXXII, Exercise D

Multiply one or more digits with three digits and zero as a place holder in the thousandths place.

(1) 3 (2) 2 (3) 4 (4) 5 (5) 2
X 2.041 X 5.304 X 4.203 X 3.043 X 1.504

(6) 3.702 (7) 8.605 (8) 4.906 (9) 9 (10) 6
X 5 X 8 X 7 X 9.706 X 8.079

(11) 42 (12) 52 (13) 5.042 (14) 7.096 (15) 87
X 3.061 X 4.304 X 87 X 48 X 9.073

(16) 92 (17) 58 (18) 73 (19) 49 (20) 37
X 5.086 X 7.063 X 4.805 X 6.028 X 9.065

Part XXXIII, Exercise A

Multiply two or more digits and zero as a place holder with three digits and zero in a thousandths place or whole number place.

(1) 430 (2) 504 (3) 203 (4) 402 (5) 504
X 0.324 X 4.305 X 5.024 X 6.501 X 5.023

(6) 650 (7) 840 (8) 703 (9) 301 (10) 620
X 3.802 X 6.038 X 7.086 X 9.607 X 8.079

(11) 870 (12) 902 (13) 108 (14) 280 (15) 790
X 9.670 X 2.057 X 4.081 X 8.605 X 5.280

Part XXXIII, Exercise A (Continued)

(16) 903 X 6.708
(17) 760 X 3.810
(18) 207 X 3.096
(19) 401 X 0.756
(20) 109 X 9.803

Part XXXIII, Exercise B

Multiply one or more digits with four digits in the ten thousandths place.

(1) 1 X .2513
(2) 3 X .4235
(3) 4 X .3154
(4) 2 X .4321
(5) 5 X .1534

(6) .2614 X 5
(7) .5273 X 4
(8) .6854 X 3
(9) .7392 X 2
(10) .8967 X 5

(11) 6 X .3618
(12) 8 X .7469
(13) 9 X .2948
(14) 7 X .7962
(15) 7 X .3849

(16) .6798 X 5
(17) .8976 X 3
(18) .7269 X 2
(19) .9678 X 4
(20) .4286 X 7

Part XXXIII, Exercise C

Multiply two or more digits with three digits and zero as a place holder in the ten thousandths place.

(1) 42 X .0351
(2) 31 X .4021
(3) 45 X .3504
(4) 15 X .2540
(5) 61 X .3052

(6) .2430 X 27
(7) .0271 X 19
(8) .8063 X 84
(9) .6708 X 69
(10) .9018 X 57

Part XXXIII, Exercise C (Continued)

(11) 428	(12) 763	(13) 689	(14) 897	(15) 694
X .0179	X .0285	X .6980	X .0153	X .3807
(16) .0169	(17) .8390	(18) .7506	(19) .4081	(20) 7698
X 8427	X 6154	X 2918	X 7298	X .0246

Part XXXIV, Exercise A

Multiply three through five digits with digits in the ten thousandths place with zero sometimes included as a place holder.

(1) 421	(2) 352	(3) 354	(4) 512	(5) 431
X .3510	X 1.453	X .4235	X .0534	X .3052
(6) .1524	(7) .0315	(8) .4253	(9) .3046	(10) .2708
X 461	X 327	X 476	X 324	X 1346
(11) 35219	(12) 43827	(13) 68759	(14) 51728	(15) 74693
X .0142	X .6581	X .4365	X .6019	X .0985
(16) .6092	(17) .5703	(18) .6014	(19) .0987	(20) .3907
X 87439	X 29674	X 87232	X 86975	X 48696

Part XXXIV, Exercise B

Multiply two digits having a decimal with one digit as a tenth.

(1) 2.1	(2) 3.4	(3) 1.5	(4) 5.3	(5) 4.5
X .3	X .2	X .4	X .3	X .1

Part XXXIV, Exercise B (Continued)

(6) .2 (7) .4 (8) .5 (9) .3 (10) .1

X 3.4 X 5.2 X 4.2 X 4.4 X 3.5

(11) 6.4 (12) 3.7 (13) 2.8 (14) 4.7 (15) 8.6

X .2 X .4 X .3 X .5 X .5

(16) .7 (17) .8 (18) .9 (19) .6 (20) .7

X 6.4 X 7.6 X 8.7 X 9.7 X 8.9

Part XXXIV, Exercise C

Multiplying with both factors having decimals.

(1) 32.1 (2) 4.52 (3) 1.45 (4) 3.51 (5) 42.3

X .2 X .3 X .5 X .4 X .5

(6) 7.15 (7) 6.87 (8) 9.38 (9) 76.8 (10) 9.87

X .2 X .5 X .4 X .3 X .3

(11) 3.15 (12) 4.21 (13) 3.53 (14) 2.64 (15) 53.7

X 1.4 X 2.3 X 4.2 X 5.3 X 4.4

(16) 8.96 (17) 9.78 (18) 27.9 (19) 15.8 (20) 1.65

X 6.3 X 2.9 X 1.9 X 9.2 X 8.9

(21) 3.12 (22) 1.23 (23) 12.3 (24) 13.2 (25) 31.2

X .12 .21 .13 .32 .13

Part XXXIV, Exercise C (Continued)

(26) 4.53 (27) 9.58 (28) 58.9 (29) 7.89 (30) 9.87

X .65 X .76 X .76 X .98 X .64

Part XXXV, Exercise A

Multiplying factors that include decimal fractions.

(1) 2.534 (2) 1.32 (3) 42.13 (4) 3152.4 (5) 165.37

.5 .1 2.5 X 3421.5 X .43215

(6) .981 (7) .341 (8) 2.4 (9) 5.1 (10) 68.3

X .6 .2 X 6985.7 X 4392.8 X 4.965

(11) 438.9 (12) 21.869 (13) 43.872 (14) 6.9158 (15) 5.3682

X .27865 X.98712 X 653.82 4.7216 X .22468

Part XXXVI, Exercise A

Solve Multiplication with subtraction problems. They are problems determining wholesale prices of cars with options.

(1) Loan price of an air conditioner for 1976 Class F cars is $135.00; add 3% of the loan price to the loan price to get the wholesale price. $135. X .03 = ___; $135. + ___ = ___. Market price is $170. Subtract the wholesale price from the loan.

(2) $340. A/C

X .03 % rate increase

increase to wholesale

$340. loan rate A/C

+ ____ wholesale increase

____ wholesale A/C

Part XXXVI, Exercise A (Continued)

(2) Market price is $425.00; subtract the wholesale price from the market price.

(3) $4250.00 wholesale base price 8 Cyl. 1977 Monte Carlo; loan price $215. air conditioner; $30.00 cruise control; $40.00 vinyl roof.

$215. + $30. + $40. = ___ total loan amount of options

X .03 % rate increase to wholesale

___ wholesale price of options

+ $4250. wholesale base price of car

_____ wholesale price of car with options

Subtract the loan price of the car with options from the wholesale price with options. The loan base price is $3800.00

(4) $3940.00 wholesale base price 8 cyl. 1977 Ford LTD; $220. air conditioner loan; $40. cruise control loan price; $70. Stero & Tape; $50. vinyl roof; $45. tilt steering wheel. The loan base price is $3560. Find the difference between the wholesale price with options and loan price with options.

$220. A.C. loan amt.

40. cruise/cont.

70. stero & Tape radio

50. vinyl roof

45. tilt steering wheel

_____ Total loan amount of options

Part XXXVI, Exercise A (Continued)

(4) ________ loan amount of options

+ .03 rate % increase to wholesale price

________ wholesale price of options

+ ________ wholesale base price of car

________ wholesale price of car with options

(5) $2345.00 wholesale base price 8 cyl. Plymouth 1976 Duster Coupe 2D $2120.00 loan price. Find the difference between wholesale price with options and loan price with options.

$175.	loan price of Air/C
80.	loan price of auto/trans.
25.	cruise control loan price
30.	power brakes loan price
45.	power steering loan price
	Total loan amount of options

A 3% increase is needed to bring loan price of options to wholesale price. Find wholesale price of car with given options.

Part XXXVI, Exercise B (Continued)

Solve problems with multiplication, subtraction and addition. Problems are developed using information from 1978 Autos Buyers Guide Reports.

(1) $139. white steel belted radial tires list price

.15 discount rate %

amount of discount from list price

Part XXXVI, Exercise B (Continued)

(1) $139. list price

- ___ amount discounted

$____ dealers cost

(2) $542. list price air/cond, Thunderbird 1978 $542 - $ ___ =

.22 discount rate % _____ dealer cost.

___ amount to discount from list

(3) 1978 Plymouth Arrow has a list price of the following optional equipment $270. auto/trans; $137. AM/FM Radio; $396. air/cond. Discount rate 17%. Find the dealer's cost of the equipment by adding the list prices, multiplying by the discount rate, then subtracting the amount discounted from the total list price.

(4) 1978 Dodge Charger has a dealer's cost base price of $4434.00; a list price of optional equipment is as follows: $127. white steel belted radial tires; $248. AM/FM Radio; $563. air/cond.; $96. cruise control. For the dealer's cost of this equipment, there is a 24% discount rate. Find the dealer's cost of the optional equipment by multiplying the total amount of the options by the discount rate and subtract that amount from the total list price of the options. Find the dealer's cost for the car by adding the dealer's cost price for the optional equipment to the dealer's cost base price of the car.

(5) 1978 Pontiac Bonneville Sedan has a dealer's cost base price of $4734.

It has a 23 per cent rate of discount on the optional equipment. Optional equipment lists $239. AM/FM radio; $581. air/cond., and $76. for tinted glass. Find the dealer's cost for this optional equipment; find the dealer's cost for the car with this equipment.

(6) 1978 Mercury Cougar - $49. list price tires; $204. AM/FM radio; $542. Air/Conditioner; $61. tinted glass; and $103. cruise control. Dealer's cost for the car without optional equipment $4257. Discount rate on optional equipment is 22%. Find the dealer's cost with the optional equipment.

(7) 1978 Buick Century Custom, 4 door Sedan dealer cost price $3921. Optional equipment: $97. white steel belted radials; $307. auto/trans; $152. pwr/steer; $69. pwr/brks; $236. AM/FM radio; $544. air/cond; $62. tinted glass; $90. cruise control. Discount rate on optional equipment is 22%. Find the total dealer's cost. To find a fair price for this car so equipped, multiply the total dealer's cost by 6% and add the amount found to the total dealer's cost.

(8) 1978 Mercury Monarch 2 Door Sedan 6 cyl. has a dealer cost of $3682. without optional equipment. List price $196. auto/trans; $146. pwr/str; $61. pwr/disc brks; $187. AM/FM radio; $495. air/cond; $54. tinted glass; $91. cruise cont; $61. tilt steering column. The discount rate on optional equipment is 22%. Find the dealer's cost of optional equipment; find the dealer's cost of car with the optional equipment; find the amount of dealer profit at the rate of 4% of the

Part XXXVI, Exercise B (Continued)

total dealer cost. Find the total price of the car with the equipment and a 4% profit to the dealer.

(9) 1978 Plymouth Fury 8 cyl. 2 seat wagon, dealer cost base price $4198. Discount rate is 24% of the list price of the following optional equipment: $204. tires; $313. auto/trans.; $162. pwr/str; $248. AM/FM radio; $563. air/cond.; $64. tinted glass; $96. cruise control; $91. rear window defroster. Find the dealer's cost. If the dealer will sell the car so equipped at 5% above dealer cost, what is the selling price?

(10) 1978 Ford Fairmont 4 dr station wagon optional equipment at list prices is as follows; $126. radial tires; $361. auto/trans.; $142. pwr/steer; $60. pwr/brks; $476. air/cond. $51. tinted glass; and $187. AM/FM radio. There is a 15% discount off of the list price for the dealer's cost. Dealer's cost of the car without optional equipment is $3509. Find the cost to a customer if he buys the car at 6% above the dealer's cost of the base price with the options mentioned.

Part XXXVII, Exercise A

Solve the following problems that require multiplying and subtracting.

(1) If you must finance your car, and you borrow $5432.00 at 12% interest per year, how much less interest per year would you pay, if you borrowed the money at 9% interest?

Part XXXVII, Exercise A (Continued)

(2) $6328.00 amount borrowed for a new Buick
    .15 interest per cent
    interest for one year; find how much more the car cost if the interest is 18% for one year.

(3) $4950.00 amount borrowed to buy a car.
    .12 interest per year
    interest for one year. How much interest will there be after three years? _____. How much less interest, if the interest rate is nine per cent per year for three years? _____

(4) If a list price of a Dodge Monaco fully equipped is $5926.00 and the list price of the car without the optional equipment is $4322.00, how much is the list price of the optional equipment. Find the dealer's cost of the optional equipment by multiplying the list price of the optional equipment by 76 per cent.

(5) $5794. list price of fully equipped Pontiac Firebird.
  - 4545. list price of the car without the optional equipment
    list price of the optional equipment
  X .78 discount per cent of the dealer's cost
    dealers cost of the equipment.

Part XXXVII, Exercise B

Problems with multiplication, subtraction and addition.

(1) If the Oldsmobile Omega coupe lists at $5717 fully equipped and lists

Part XXXVII, Exercise B (Continued)

at $3973 without equipment. How much is the equipment at list price? If dealer's cost for equipment is 78% of list price of equipment, what is dealer's cost of equipment? If dealer's cost of the car without equipment is $3447., how much is dealer's cost with equipment? If dealer will sell the car with equipment at 6% above dealer's cost, give the dealer's price.

(2) $5934. Ford LTD II fully equipped list price
- 4800. base list price
_____ list price of optional equipment.
.78 dealer cost per cent.
_____ dealer cost of optional equipment
+ 3998. dealer cost of the car's base price.
_____ dealer cost of the car fully equipped.
.06 per cent profit to the dealer
_____ dealer's profit
+ _____ dealer cost of the car fully equipped
_____ dealer's price.

(3) $5490.00 List price 1978 Buick Skylark fully equipped.
- 3872.00 List price of car without the equipment
_______ List price of optional equipment
.78 Dealer Cost Multiplier
_______ Dealer Cost of Equipment
+ 3359.00 Dealer Cost of car without equipment
_______ Dealer Cost of car with equipment
X .04 Per cent of profit offered the dealer by the customer
_______ Dealers profit at four per cent.

__________ Dealer cost of car with equipment

__________ Amount the customer wants to pay for the car.

(4) $1160.00 wholesale base price of 1973 8 cyl. Dodge Dart

1550.00 market base price of the car; $125.00 market price of air/cond; $100.00 auto/trans.; $35. pwr. steering, and $25 vinyl roof.

_______ market price of the car with equipment given.

$95.00; $75.00; $25.00; and $20.00 is the loan price of the equipment. Three per cent of the loan price of the equipment added to the loan price give the wholesale price of the equipment.

$_______ total loan price of the equipment

X .03 rate per cent of the loan price

________ amount of the wholesale price above the loan price.

+ ______ loan price of the equipment.

$ _______ wholesale price of the equipment.

How much more is the market price of the car with the equipment than the wholesale price?

(5) What is the difference of the market base price of $4375.00 and the wholesale base price of $3630.00 of a 1977 Plymouth Fury Wagon 8 cyl? ____. The loan price is $220.00 for an air cond; $115.00 for auto/trans.; and $40.00 for a cruise control; find the wholesale price for equipment by multiplying total loan price by three per cent

Part XXXVII, Exercise B (Continued)

and adding the product to the total loan price. The market price of this equipment is $275.00 for the air conditioner; $145.00 for the automatic transmission and $50.00 for the cruise control. Find the difference between the market price and the wholesale price of the car with the equipment.

Part XXXVII, Exercise C

Sales of an Auto Parts Store

(1) Ordered: 3 sets 88-2584 W piston rings @ $13.98 per set
5 sets 89-1283 N piston rings @ $14.98 per set
A discount of 12% was given, how much is the cost of the order?

(2) Ordered: 4 fuel pumps for 1965-1974 Jaquars # 88-6803 W @ $26.98 with a 4% discount. How much is the order?

(3) Order one water pump for 1975 Audi Fox #88-7662 N @ $16.98; 4 of intake valves for 1974 Volkswagen #881491 N @ $1.69 each and 4 exhaust valves #88-1492 T @ $3.29 each, with a 13% discount. How much will the order be?

(4) Order a camshaft kit for a Chevrolet V8 350 engine #37-7037 B @ $104.95 23 air cleaners #73-2593 U @ $14.95; 4 sets of spark plugs # 55-0292 X @ $8.98 per set. With a 14% discount, what will be the cost? With a sales tax of 5 per cent, what is the cost including tax?

Part XXXVII, Exercise C (Continued)

(5) Order 3 sets # 55-1374 B Camshaft bearings for 1953-76 Dodge and Plymouth V8 engine @ $5.98; three camshafts #550913 Y for 1953-75 Dodge and Plymouth V8's @ $42.87. With a 15% discount, how much is the order? With a 5% tax, how much is the order?

Part XXXVII, Exercise D

Writing bills in the Auto Parts Store.

(1) The State Garage ordered the following parts: 1 set of connecting rod bearings for a 1976 Chevrolet Camaro 327 engine std. stk no. 37-6095 A 1 set @ $9.98 and 1 set of main bearings stk no. 37-6098 N $10.98. The parts are on sale at a discount of 13 per cent. There is a five per cent tax on the discounted price. How much is the bill to the State Garage?

(2) We Fix It Garage ordered the following: for a 1970 Ford V8 with a 390 engine stk no. 37-4605 R, 1 set of eight pistons @ $59.95; 1 set of rings 37-1733 B Chrome Super Hi-Speed $16.98. The parts are discounted to the garage @ 12 per cent; and there is a five per cent tax on the discounted price. How much payment must We Fit It Garage make?

(3) The Auto Parts Company bill to Sam's Garage is as follows: AMC 1975, 8 cyl. 390 engine camshaft stk. no. 37-6055 N $29.98; camshaft bearings stk. no. 55-1374 B one set $5.98; eight exhaust valves stk. no. 55-1432 Y @ $3.29 each; 5 intake valves stk. no. 55-1427 X @

$2.69 each. There is a four per cent discount to the garage and a five per cent tax on the discounted total. Find the total bill for Sam's Garage.

(4) Hiway Garage order:

1974 Mercury V8, 352 engine Rocker arm & Shaft Assembly Kit 37-5497 P	$71.95
1975 Dart V8, 318 engine Rocker Arm & Shaft Assembly Kit 37-6239 N	48.95
4 exhaust valves 55-1426 P each @ $2.99	
3 intake valves 55-1424 N each @ $2.69	
1 set of 16 valve springs 55-1091 B @ $13.98	13.98
Total	
Discount @ 12%	
Tax @ 5%	
Total	

(5) Village Motors order:

1967 Cadillac V8, 472 engine camshaft 37-6390 W	$56.98
Camshaft Bearings 55-1374 B 1 set @ $5.98	5.98
7 Valve Guides Intake 88-6997 W each @ $1.29	
8 Valve Guides Exhaust 88-6997 W each @ $1.29	
Total	
Discount 9%	
Tax 5%	

Part XXXVII, Exercise D (Continued)

(5) Total ____________

(6) Service Garage order:

38 Best Spin-on Filter, 55-1914 N each @ $1.98 ________

15 Insert type Filter Cartridges 55-1917 Y each @ $1.39 ______

They replaced 38 filters of different cars with the 55-1914 N filters and charged $4.68 each plus 5% tax. They replaced 15 filters of different cars with the 55-1917 Y filters @$3.98 each plus 5% tax. How much profit did Service Garage make on the 38 filters? On the 15 filters? How much tax went to the government on all of the filters?

(7) Superior Garage ordered the following parts: 1975 Ford V8, 302 engine Heavy Duty Oil Pump 37-2071W $17.49; 8 exhaust valves 55-2281 Y each @ $3.59; 7 intake valves 55-2281 Y each @ $3.59; 2 sets push rods 55-1070 W per set @ $7.98. Superior Garage increased the price of the parts to the customer by 7 per cent plus 5 per cent tax. How much money did it cost the customer?

(8) Hilltop Garage ordered the following gasket sets: 4 overhaul sets for American Motors 6 cylinder 1966-75 engines stk. no. 37-4027 W per set @ $16.98; 3 overhaul sets 1970-72, 304 V8 engines stk. no. 37-5971 U per set @ $21.49; and 5 overhaul sets for V8 1970-72, 360 390, and 401 engines stk. no. 37-5972 B per set @ $25.98. The sets were discounted to Hilltip Garage @ 7 per cent, and Hilltop Garage sold

Part XXXVII, Exercise D (Continued)

the gaskets @ 6 per cent above the book price. How much money did Hilltop Garage make from the sale of the gaskets?

Part XXXVIII, Exercise A

Problems solved with the calculator.

(1) 25 - 13	(2) 8 + 2	(3) 5 X 4	(4) 12 X 3	(5) 14 - 5
(6) 27 + 4	(7) 83 + 15	(8) 89 X 3	(9) 67 X 4	(10) 358 + 143
(11) 647 - 386	(12) 3564 - 587	(13) 938 X 7	(14) 1875 X 36	(15) 7389 X 465
(16) 4869 X 3287	(17) 8407 - 3643	(18) 9608 - 5869	(19) 7006 - 4978	(20) 8030 +7574

Part XXXVIII, Exercise B

Solving problems with the calculator.

(1) 3 X 2 - 4 = ___ (2) 5 X 4 - 12 = ___ (3) 14 X 3 - 23 = ___

(4) 23 X 5 - 54 = ___ (5) 312 X 4 - 413 = ___ (6) 786 X 6 - 953 = ___

(7) 9428 X 9 - 43867 = ___ (8) 576 X 79 - 3987 = ___

Part XXXVIII, Exercise B (Continued)

(9) 978 X 604 - 7329 = ___ (10) 806 X 970 - 5079 = ___

Part XXXVIII, Exercise C

Drill problems using the calculator

(1) 5 X 4 + 3 - 2 = ___ (2) 23 X 5 - 4 + 13 = ___

(3) 4 X 13 + 25 - 12 = ___ (4) 34 X 3 + 21 - 14 = ___

(5) 53 X 42 + 231 - 143 = ___ (6) 748 X 69 + 968 - 79 = ___

(7) 378 X 96 + 1629 - 879 = ___ (8) 689 X 74 + 9,378 - 32,079 = ___

(9) 2098 X 23 + 1867 - 908 = ___ (10) 978 X 208 + 7286 - 13,907 = ___

Part XXXIX, Exercise A

Stated problems originated with the use of 1978 Autos Buyers Guide Reports.

(1) State Pontiac made a sale as follows:

Pontiac Grand Prix model J 37 fully equipped	
list price	$6,463.00
List price of the car without optional equipment	
Base price	- 4,880.00
Total list price of optional equipment	______
Dealer Cost Multiplier (DCM)	X .78
Dealer Cost of Optional Equipment	______
Dealer Cost of Car's base price	+ 4,041.00

Part XXXIX, Exercise A (Continued)

Dealer Cost of car fully equipped		______
List price		$6,463.00
Dealer Cost Price	-	______
Dealer Profit		______

(2) American Ford sold a Ford Fairmont 2 d. sedan fully equipped $4679.00. Base list price was $3589.00 Subtract the fully equipped price $4679.00 minus $3589.00 the base list price, to find the list price of optional equipment ______. Dealer cost multiplier (DCM) is 85; multiply list price of optional equipment by .85 to find the dealer's cost of the optional equipment. Dealer cost is $3124.00. How much profit did the dealer make on the sale?

(3) Mercury Monarch model 66 H fully equpped list price		$5741.00
Base Car list price	-	4330.00
List price of Optional equipment		______
Dealer Cost Multiplier (DCM)		X .85
Dealer Cost of optional equipment		______
Base car dealer cost price	+	3682.00
Total dealer cost		______
Fully equipped list price		$5741.00
Fully equipped dealer cost price	-	______
Profit made by the dealer		______

Part XXXIX, Exercise A (Continued)

(4) From problem 1, enter the dealer cost price of the fully equipped Pontiac Grand Prix, multiply that price by six per cent. Subtract the price of the car at a six per cent increase, known as the market price from the dealer's list price to find the customer's savings.

(5) From problem 2, enter the dealer cost price of the fully equipped Ford Fairmont. Multiply the dealer cost by four per cent to find bargain price for the customer. Subtract the customer bargain price from the fully equipped list price to determine the savings by the customer.

(6) From problem 3, enter the list price of the Mercury Monarch model 66H fully equipped $5741.00; enter the dealer cost price of the car fully equipped _______. Multiply the dealer cost price ________ by six per cent ________ and add this dealer profit to the dealer cost price _______. Subtract the customer market price from the list price $5741.00 to find the customer's savings. If the customer paid only four per cent above the dealer cost price, what would be the customer savings?

(7) Mr. and Mrs. Tom Flores went shopping for a new car. They liked the Ford Thunderbird model 87 2 door Hardtop with a total list price of $6470.00. They didn't want to pay that much so they bought an issue of the Buyer's Guide Reports, 1978 Autos. The book showed them the dealers cost for the car without the optional equipment, $4271.00.

Part XXXIX, Exercise A (Continued)

The book showed the base list price to be $4880.00. They found the list price of the optional equipment, _______. The book showed them the DCM was .78 by which they multiplied the list price of the optional equipment. They found the total dealer cost of the equipment to be _________. The book suggested they multiply the total dealer cost by four per cent and add that amount to the total dealer cost. They returned to the dealer and offered to buy the car at the customer's bargain price of four per cent over dealer cost. The dealer appeared interested but offered to sell them the car at $5951.20. Mr. and Mrs. Flores then multiplied the total dealer's cost by six per cent and added that amount to the total dealer cost. They submitted this bid which was ______. The dealer agreed, and Mr. and Mrs. Flores bought their first new car at a fair market price. How much less then the list price did they pay?

(8) Jeff and Sue Cole wanted to buy a Chevrolet Camaro Sport Coupe, 6 cylinder model 1FQ 87. They referred to the Buyer's Guide Reports 1978 Autos and noticed the base list price was $4414.00 and the base dealer cost was $3829.00. They wanted the following optional equipment: AM/FM Radio, list price $229.00 and air conditioning, list price $539.00. The DCM is .78, so they found the dealer cost of the two pieces of equipment. They determined the dealer cost of the car with those two pieces of equipment. They decided to offer the dealer four per cent more than the total dealer cost for the car. The dealer thought the offer over and decided he could not cut the

Part XXXIX, Exercise A (Continued)

price that much on the car. They left their phone numer and address with the dealer and eventually left. The next day, the dealer called them and offered to sell them the car at five per cent over total dealer cost. They decided to buy the car. What was the selling price of the car?

Part XXXIX, Exercise B

Stated problems using the J. C. Whitney & Co. Automotive & Accessories catalog.

(1) Foreign Car Repair Garage ordered the following parts: 6 generators for 1969-73 V W Karmann Ghia Stk. no. 72-0661 B each @ $46.95; four water pumps for 1973-76 V W Dasher, Rabbit, Scirocco cars, stk. no. 88-7662 N each @ $16.98. Foreign Car Repair Garage marked the prices up to the customer @ 13 per cent. How much did the garage pay for the parts? How much did the garage sell the parts? What profit did the garage make on the parts?

(2) Foreign Car Repair Garage ordered a reground crankshaft with rod and main bearings for a 1970 Volkswagen 1600 engine stk. no. 37-6651 A kit $44.98; a rock arm assembly stk. no. 37 - 6841 Y kit @ $54.98; and two reconditioned cylinder head assemblies stk. no. 37-6707 A each @ $59.98. A mechanic worked 5.7 hours at $14.50 an hour repairing the engine. The parts were marked up 16 per cent to the customer. What were the total charges to the customer?

Part XXXIX, Exercise B (Continued)

(3) Hiway Garage ordered a starter for a 4 WD Toyota Land Cruiser @ $49.95. The mechanic removed and replaced the old starter in 1.3 hours. The labor charge was $15.00 per hour. The customer paid a nine per cent mark-up on the starter. What was the customer's bill after a 5 per cent tax on the part?

(4) Foreign Car Repair Garage removed and replaced a fuel pump on a 1974 Beetle stk. no. 88-7730 P which they ordered for $19.95; a fan belt stk. no. 15-3605 W @ 98¢; a starter stk. no. 72-0662P @ $44.95. The mechanic took 3.8 hours @ $16.50 an hour. The parts mark-up was eight per cent and tax on parts was 5%. What was the customer charged?

(5) Service Garage removed and replaced an oil pump on a 1975 GMC Truck, 327 V8 engine with stk. no. 37-0896 Y @ $14.95; removed and replaced the oil filter with stk. no. 55-1914 N @ $1.98; they changed the oil putting in six qts. at a cost of 53¢ a quart to the garage. The mechanic worked 2.7 hours @ $12.00 per hour; the oil was billed to the customer @ $1.10 per quart. The filter was marked-up to $4.50; the oil pump was billed to the customer at 23% above the dealer cost. What was the bill to the customer after a 5 per cent tax for parts?

(6) Service Garage removed and replaced the pistons, rings, and crankshaft bearings on a 1970 Mustang V8 with a 390 engine. They ordered a set of 8 pistons stk. no. 37-4605 R @ $59.95; one set of rings Chrome

Part XXXIX, Exercise B (Continued)

Super Hi-Speed stk. no. 37-1733 B @ $16.98; one set of .020 connecting Rod Bearings stk. no. 37-4734 X @ $12.98 and Main Bearings stk. no. 30-0542 N @ 17.98. The mechanic worked 5.4 hours one day, 3.8 hours the next day, and 2.7 hours a third day on the car. The garage charges $17.50 an hour for labor; they mark the price of parts up a 14 per cent. With a tax of 5 per cent for parts, what is the customer's bill?

(7) Foreign Car Repair Garage ordered 13 Air Cleaner Filter Elements for 1973-74 Audi Fox stk. no. 73-2196 W @ $3.19 each; 24 Air Cleaner Filter Elements for 1975-76 Audi Fox stk. no. 73-2338 U @ $3.39 each; 21 Air Cleaner Filter Elements for 1975-76 V W Rabbit @ $3.49 each. Foreign Car Repair Garage was given a nine per cent discount on the filters and sold the cleaners at 15 per cent over the price before the discount. How much did the filters cost the garage? How much did the garage sell each air cleaner? How much profit did the garage make on all of the filters? What per cent profit did the garage make from the garage's cost on the amount they got for the air cleaners?

(8) Hiway Garage ordered a carburetor repair kit for 1975-1976 Toyota SR 5 1588 cc, stk. no. 73-2401 P at $8.95 with a garage discount of seven per cent. The mechanic over hauled the 1975 Toyota's carburetor taking 1.7 hours. The charge for the kit was $10.35, and the labor charge per hour $12.50. What was the bill with a 5 per cent

Part XXXIX, Exercise B (Continued)

state tax on parts? How much money did the garage make on the kit?

Part XL, Exercise A

Before solving the following problems, look into the dictionary and locate the definition of "displacement" as it describes a piston in a cylinder. Write this definition on your paper. Locate "stroke" as it refers to the action of a piston when moved by the connecting rod. Write this definition of "stroke". Locate "bore" and write the definition of "bore" as it refers to an engine cylinder. Finally, find the definition for "pi" as it is used as an arithmetic amount and also write the amount and "pi's" definition.

To find the area of a circle the formula is πr^2. This symbol "π" is pi. The "r" is the radius of a circle which is one-half of the diameter of a circle. The bore of a car's engine cylinder is the diameter of a circle. r^2 means r X r, the radius times itself.

The following problems require rounding off; limit the numerals involved by adding to the last numeral when the adjoining numeral is "5" or more. Ex. 3.14155 will become 3.1416. Rounding off to the amount of .0001 makes very little difference in the following problems.

(1) Find the area of a circle that has a radius of two inches. Pi X r^2 = area of circle in square inches.

Part XL, Exercise A (Continued)

(2) Find the area of a circle that has a radius of 1.5 inches. Pi X r^2 = area.

(3) Find the cubic inch displacement of a cylinder, if the radius of the cylinder 1.25 and the stroke is 3.
Pi X r^2 = area of circle. Area of circle X stroke = cubic inch displacement of one cylinder.

(4) Find the cubic inch displacement of a cylinder when the radius is 1.3 and the stroke is 3.2; Pi X r^2 = area. Area X stroke = cubic inch displacement.

(5) Find the cubic inch displacement of 8 cylinder engine when the radius is 2.04 inches and the stroke is 3.28 inches: Pi X r^2 = area.
Area X stroke = cubic inch displacement of one cylinder; cubic inch displacement of one cylinder X 8 cylinders equal cubic inch displacement of the engine. Round off to whole numerals.

(6) Find the cubic inch displacement (CID) of a 6 cylinder engine when the radius is 1.875 inches and the stroke is 3 inches. π X r^2 = area of circle; area X stroke = cubic inch displacement of one cylinder . CID X 6 cylinders = CID of the engine.

(7) Find the cubic inch displacement (CID) of an 8 cylinder engine when the radius is 2.083, the stroke is 3.754. π X r^2 = area of circle,

Part XL, Exercise A (Continued)

area X stroke = CID of one cylinder; CID of one cylinder X 8 cylinders = CID of an engine. Round answer to whole numerals.

(8) Find the CID of a 6 cylinder engine, if the radius is 1.703 and the stroke is 3.125. Round the answer off to whole numerals.

(9) Find the CID of a 6 cylinder engine, if the radius is 1.703 and the stroke is 4.125. Round the answer off to whole numerals.

(10) 8 cylinder engine; radius 2.02; stroke 3.31. Find the CID of the engine; round off to whole numerals.

Part XL, Exercise B

Solve simple division problems. Materials used, nuts. Division is having an amount indicated by numerals and pulling groups of a stated amount from the first amount. You record the number of groups pulled out of the amount.

(1) Draw a corral or pen three inches by three inches on a piece of paper with the "gate" open one inch wide. Put 2 nuts inside the corral. Take the nuts out one at a time. $1\,\underline{|2\quad}$ or $2 \div 1 =$ __. How many times did you take the nuts out?

(2) Put 4 nuts into the corral and take the nuts out 2 at a time. How many times did you take out 2 nuts? $2\,\underline{|4\quad}$ or $4 \div 2 =$ ___

(3) Put 6 nuts into the corral and take out 2 nuts at a time. $2\,\underline{|6\quad}$ or

Part XL, Exercise B (Continued)

6 ÷ 2 = ___. Put the 6 nuts back into the corral and take out 3 nuts at a time. $3\overline{)6}$ or 6 ÷ 3 = ___.

(4) Put 8 nuts into the corral and take out 4 nuts at a time. $4\overline{)8}$ or 8 ÷ 4 = ___. Put the 8 nuts into the corral and take out 2 nuts at a time. $2\overline{)8}$ or 8 ÷ 2 = ___.

(5) Put 12 nuts into the corral and take out 2 nuts at a time 12 ÷ 2 = ___. Take out 3 nuts at a time 12 ÷ 3 = ___. Take out 6 nuts at a time. 12 ÷ 6 = ___.

(6) Put 18 nuts into the corral. Remove groups of 2; groups of 3; groups of 6; groups of 9; groups of 1; of 18.

(7) Prove the problem by multiplying the answer times the size of the group. Example: 22 ÷ 2 = 11. Proof 11 X 2 = 22.

10 ÷ 2 = ___; ___ X 2 = ___. 9 ÷ 3 = ___; ___ X 3 = ___

(8) 20 ÷ 2 = ___; ___ X 2 = ___. 20 ÷ 4 = ___; ___ X 4 = ___.

20 ÷ 10 = ___; ___ X 10 = ___. 20 ÷ 5 = ___; ___ X 5 = ___.

(9) 36 ÷ 2 = ___. In division there is often a remainder. Let short screws be tens and nuts be ones. Put three short screws and 6 nuts in the corral. Start with taking out short screws in groups of two. You can take out only one group of two short screws; be sure

Part XL, Exercise B (Continued)

to keep the number of times to take out tens in the tens place and there is a short screw and six nuts left in the corral. Remember the short screw is valued at ten; the same as ten nuts. Sixteen nuts is the same as one short screw and six nuts; substitute sixteen nuts for the one short screw and six nuts. Take out the sixteen nuts by twos. Put the number of times twos are taken out in the ones place.

$36 \div 2 = \underline{18}$ $\qquad \begin{array}{r} 18 \\ 2\overline{)36} \\ \underline{2} \\ 16 \\ \underline{16} \end{array}$ $\qquad$ or $\qquad \begin{array}{r|l} 2 & \underline{36} \\ & 18 \end{array}$

Notice the one and eight of the answer are kept in the proper place.

Proof 18 X 2 = $\underline{36}$.

Work: $34 \div 2 = \underline{\quad}$ $\qquad 2\overline{)34}$ $\qquad 2\lfloor\underline{34}$

(10) $56 \div 4 = \underline{\quad}$ $\qquad 4\lfloor\underline{56}$ $\qquad 4\overline{)56}$

Part XL, Exercise C

Chalkboard drill problems

(1) 4 ÷ 2 = ___ (2) 6 ÷ 2 = ___ (3) 8 ÷ 4 = ___ (4) 9 ÷ 3 = ___

(5) 10 ÷ 5 = ___ (6) 12 ÷ 4 = ___ (7) 24 ÷ 6 = ___ (8) 48 ÷ 4 = ___

(9) 36 ÷ 2 = ___ (10) 36 ÷ 4 = ___ (11) 54 ÷ 6 = ___ (12) 54 ÷ 2 = ___

(13) 82 ÷ 2 = ___ (14) 51 ÷ 3 = ___ (15) 26 ÷ 2 = ___ (16) 39 ÷ 3 = ___

Part XL, Exercise C (Continued)

(17) 78 ÷ 3 = ___ (18) 96 ÷ 4 = ___ (19) 85 ÷ 5 = ___

(20) 64 ÷ 4 = ___

Part XL, Exercise D

Seatwork Problems use the short or long division method or the form given.

(1) 8 ÷ 2 = ___ (2) 6 ÷ 3 = ___ (3) 12 ÷ 4 = ___ (4) 12 ÷ 2 = ___

(5) 15 ÷ 5 = ___ (6) 24 ÷ 2 = ___ (7) 24 ÷ 8 = ___ (8) 28 ÷ 7 = ___

(9) 30 ÷ 2 = ___ (10) 45 ÷ 3 = ___ (11) 72 ÷ 8 = ___ (12) 48 ÷ 6 = ___

(13) 81 ÷ 9 = ___ (14) 52 ÷ 4 = ___ (15) 92 ÷ 2 = ___ (16) 75 ÷ 5 = ___

(17) 96 ÷ 6 = ___ (18) 78 ÷ 6 = ___ (19) 49 ÷ 7 = ___ (20) 63 ÷ 7 = ___

Part XLI, Exercise A

Some times there will be a remainder on a division problem. With nuts in a corral taken out in groups there may be a nut or nuts left. The number left will always be smaller than the size of the group taking nuts out of the corral. Example: 9 nuts ÷ 2 = 4 remainder 1. Put nine nuts in the corral and take them out by two's.

(1) 7 ÷ 2 = ___ remainder ___. (2) 10 ÷ 4 = ___ rem. ___.

Part XLI, Exercise A (Continued)

(3) 17 ÷ 3 = __ r __. (4) 18 ÷ 2 = __ r __. (5) 24 ÷ 3 = __ r __

(6) 29 ÷ 3 = __ r __ (7) 84 ÷ 4 = __ r __ (8) 92 ÷ 4 = __ r __

(9) 27 ÷ 9 = __ r __ (10) 53 ÷ 5 = __ r __ (11) 639 ÷ 3 = __.

(12) 484 ÷ 4 = ___ (13) 496 ÷ 2 = ___ (14) 495 ÷ 3 = ___

(15) 786 ÷ 3 = ___ (16) 928 ÷ 4 = ___ (17) 780 ÷ 2 = ___

(18) 150 ÷ 5 = ___ (19) 375 ÷ 5 = ___ (20) 858 ÷ 6 = ___

Part XLI, Exercise B

Dividing by ten, using long division with out a remainder. Example:

$$\begin{array}{r} 2 \\ 10\overline{)20} \\ \underline{20} \end{array}$$

How many times can you take tens out of twenty? Using the corral, put two short screws inside and take out one at a time.

(1) $10\overline{)40}$ (2) $10\overline{)50}$ (3) $10\overline{)30}$ (4) $10\overline{)60}$

(5) $10\overline{)70}$ (6) $10\overline{)90}$ (7) $10\overline{)80}$ (8) $10\overline{)100}$

(9) $10\overline{)110}$ (10) $10\overline{)120}$

Part XLI, Exercise C

Dividing by twenty, using long division without a remainder.

Part XLI, Exercise C (Continued)

Example:
$$\begin{array}{r} 2 \\ 20\overline{)40} \\ \underline{40} \end{array}$$

How many times can you take twenties out of forty?

Remember that zero is used as a place holder in division too.

(1) $20\overline{)60}$ (2) $20\overline{)80}$ (3) $20\overline{)400}$

proof: 20 X ___ = 60 20 X ___ = 80 20 X ___ = 400

(4) $20\overline{)120}$ (5) $20\overline{)100}$ (6) $20\overline{)880}$

proof: 20 X ___ = 120 20 X ___ = 100 20 X ___ = 880

(7) $20\overline{)140}$ (8) $20\overline{)640}$ (9) $20\overline{)180}$

proof: 20 X ___ = 140 20 X ___ = 640 20 X ___ = 180

(10) $20\overline{)300}$ (11) $20\overline{)500}$ (12) $20\overline{)1000}$

proof: 20 X ___ = 300 20 X ___ = 500 20 X ___ = 1000

(13) $20\overline{)700}$ (14) $20\overline{)780}$ (15) $20\overline{)560}$

proof: 20 X ___ = 700 20 X ___ = 780 20 X ___ = 560

(16) $20\overline{)1040}$ (17) $20\overline{)2000}$ (18) $20\overline{)3000}$

proof: 20 X ___ = 1040 20 X ___ = 2000 20 X ___ = 3000

(19) $20\overline{)620}$ (20) $20\overline{)3500}$

proof: 20 X ___ = 620 20 X ___ = 3500

Part XLII, Exercise A

Divide by ten and there will be remainders with some problems. Remember the remainder is still to be divided by 10.

(1) 10)40 (2) 10)45 (3) 10)53 (4) 10)32 (5) 10)28

(6) 10)39 (7) 10)67 (8) 10)86 (9) 10)103 (10) 10)234

(11) 10)356 (12) 10)463 (13) 10)937 (14) 10)3029 (15) 10)4168

(16) 10)8374 (17) 10)1976 (18) 10)53762 (19) 10)307

(20) 10)4002

Part XLII, Exercise B

Divide by twenty. There will be remainders in some problems.

(1) 20)20 (2) 20)60 (3) 20)100 (4) 20)80

(5) 20)40 (6) 20)23 (7) 20)254 (8) 20)460

(9) 20)844 (10) 20)987 (11) 20)305 (12) 20)674

(13) 20)407 (14) 20)6538 (15) 20)79021 (16) 20)30305

(17) 20)79630 (18) 20)90350 (19) 20)87906 (20) 20)30708

Part XLIII, Exercise A

Dividing problems by two digits.

(1) 11)11 (2) 11)22 (3) 12)24 (4) 21)42

(5) 11)363 (6) 11)121 (7) 12)483 (8) 21)315

(9) 12)967 (10) 21)462 (11) 21)751 (12) 21)6993

Part XLIII, Exercise A (Continued)

(13) 11)6834 (14) 12)14472 (15) 12)1748 (16) 11)75050

(17) 12)1026 (18) 21)2652 (19) 11)3008 (20) 11)4735

Part XLIII, Exercise B

Dividing two digits by different divisors.

(1) 12)24 (2) 13)39 (3) 25)50 (4) 33)99

(5) 43)86 (6) 47)94 (7) 36)72 (8) 27)81

(9) 23)92 (10) 32)96 (11) 42)84 (12) 16)96

(13) 17)68 (14) 18)72 (15) 34)68 (16) 28)84

(17) 25)75 (18) 17)85 (19) 19)76 (20) 16)98

Part XLIII, Exercise C

Two digits dividing three digits.

(1) 11)110 (2) 13)143 (3) 12)144 (4) 21)462

(5) 21)105 (6) 32)672 (7) 39)117 (8) 43)903

(9) 27)621 (10) 14)546 (11) 57)986 (12) 37)777

(13) 19)798 (14) 72)956 (15) 38)872 (16) 45)900

(17) 83)332 (18) 84)504 (19) 48)963 (20) 41)902

Part XLIV Exercise A

Dividing three and four digits amount by two digits with remainder.

Part XLIV, Exercise A (Continued)

(1) $11\,\overline{)128}$ (2) $11\,\overline{)147}$ (3) $12\,\overline{)149}$ (4) $12\,\overline{)158}$

(5) $21\,\overline{)446}$ (6) $31\,\overline{)968}$ (7) $42\,\overline{)2563}$ (8) $37\,\overline{)7973}$

(9) $27\,\overline{)708}$ (10) $23\,\overline{)968}$ (11) $17\,\overline{)1000}$ (12) $73\,\overline{)7605}$

(13) $81\,\overline{)3008}$ (14) $94\,\overline{)8320}$ (15) $67\,\overline{)5000}$ (16) $58\,\overline{)698}$

(17) $53\,\overline{)7874}$ (18) $62\,\overline{)1376}$ (19) $76\,\overline{)1561}$ (20) $86\,\overline{)9001}$

Part XLIV Exercise B

Dividing with one or two digits, three or four numerals with a decimal point. Remember when you are to use a digit in the amount being divided that is to your right of the decimal point, put a decimal point in the answer at that time and place the numeral, you are to use in the answer, to the right of that decimal point.

Example:

```
    12.2
3 )36.6
   3
   --
    6
    6
    --
     6
     6
     --
```

(1) $2\,\overline{)42.4}$ (2) $4\,\overline{)85.2}$ (3) $3\,\overline{)6.36}$ (4) $5\,\overline{)6.55}$

(5) $2\,\overline{).632}$ (6) $4\,\overline{)35.76}$ (7) $4\,\overline{)8.576}$ (8) $6\,\overline{).252}$

(9) $7\,\overline{).2254}$ (10) $8\,\overline{)497.6}$ (11) $9\,\overline{)9.495}$ (12) $8\,\overline{)39.36}$

(13) $7\,\overline{)484.4}$ (14) $6\,\overline{).3769}$ (15) $3\,\overline{)1.070}$ (16) $5\,\overline{)3.994}$

Part XLIV, Exercise B (Continued)

(17) $2\,\overline{)9.819}$ (18) $4\,\overline{).7906}$ (19) $8\,\overline{)683.4}$

(20) $9\,\overline{)8.907}$

Part XLV Exercise A

Solving division problems using two digits as divisors. Decimal points will also be included at times. Remainders will be in some of the problems.

(1) $11\,\overline{)231}$ (2) $12\,\overline{)264}$ (3) $21\,\overline{)4431}$

(4) $13\,\overline{).299}$ (5) $14\,\overline{)5.929}$ (6) $32\,\overline{)70.93}$

(7) $43\,\overline{)5.23}$ (8) $71\,\overline{)182.3}$ (9) $68\,\overline{)67.89}$

(10) $18\,\overline{)4.32}$ (11) $27\,\overline{)3.524}$ (12) $34\,\overline{).612}$

(13) $15\,\overline{).3482}$ (14) $52\,\overline{).104}$ (15) $31\,\overline{)5.89}$

(16) $26\,\overline{)5.278}$ (17) $93\,\overline{).1974}$ (18) $19\,\overline{)38.77}$

(19) $79\,\overline{)1.88}$ (20) $79\,\overline{)1.887}$

Part XLV, Exercise B

Dividing four or five digits by two digits. Decimals and remainders will be included.

(1) 12)123.6 (2) 11)3.5761 (3) 13)40.58 (4) 14).5938

(5) 32)649.6 (6) 25)1.003 (7) 24)78.163 (8) 51)471.85

(9) 33)13.769 (10) 43)8.574 (11) 62)12.986 (12) 27)2.9865

(13) 87).5927 (14) 68).43265 (15) 29)68.77 (16) 94)189.42

(17) 76)4.3091 (18) 87).4352 (19) 39)1.7092 (20) 89)1219.9

Part XLV, Exercise C

Dividing three to six digits by two digits. Watch for decimals and remainders.

(1) 12)12.492 (2) 21)48.3 (3) 14)60.270 (4) 23)6.97915

(5) 35).357105 (6) 24)534.761 (7) 32)836.526 (8) 41)8936.5

(9) 52)11.4837 (10) 34)9.87862 (11) 26).52104 (12) 65)29538.4

(13) 37)43.7689 (14) 18)9360.92 (15) 62).842196 (16) 78)160.376

(17) 69)83.259 (18) 93)8.7695 (19) 76)489.635 (20) 98).302897

Part XLVI, Exercise A

Note: When your divisor has a digit or digits to the right of a decimal

Part XLVI, Exercise A (Continued)

point, move the decimal point so that all of the digits are to the left of the decimal point. Also move the decimal point of the amount to be divided to the right so that the same number of digits will be moved to the left of this decimal point. If the amount to be divided did not have that many digits to the right of it's decimal point, or did not have a decimal point, put zeros to the right of the digits to fill the number of places and place a decimal point to the right of the zero.

Examples: $3.5\,\overline{)43.2}$ $2.3\,\overline{)342} = 2.3\,\overline{)342.0}$

(1) $1.1\,\overline{)342}$ (2) $2.1\,\overline{)52.5}$ (3) $2.4\,\overline{)7.68}$ (4) $1.3\,\overline{).546}$

(5) $2.5\,\overline{)57.5}$ (6) $4.3\,\overline{)890.1}$ (7) $3.2\,\overline{)78.42}$ (8) $6.1\,\overline{)122.244}$

(9) $4.5\,\overline{)113.85}$ (10) $.34\,\overline{)117.33}$ (11) $.67\,\overline{)564.81}$ (12) $.83\,\overline{)3.9757}$

(13) $.49\,\overline{)3.1223}$ (14) $.75\overline{)64800}$ (15) $9.7\,\overline{)374.42}$ (16) $.62\overline{)2932.6}$

(17) $3.7\,\overline{)23865}$ (18) $.91\,\overline{).69888}$ (19) $.89\,\overline{)785.1}$ (20) $.64\overline{)4140.8}$

Part XLVI, Exercise B

Three digit divisors with a decimal; amount to be divided, three or more digits with a decimal. Watch for a remainder!

(1) $2.11\,\overline{)90.37}$ (2) $.123\,\overline{)3.075}$ (3) $32.1\,\overline{)10.914}$ (4) $.243\,\overline{).12393}$

(5) $2.14\,\overline{)7.492}$ (6) $.631\,\overline{)3.30644}$ (7) $.427\,\overline{)1110.2}$ (8) $.384\,\overline{)2.3808}$

(9) $53.7\,\overline{)247.02}$ (10) $.694\,\overline{)26.372}$ (11) $7.59\,\overline{)2.1254}$ (12) $.863\,\overline{)681.77}$

(13) $.769\,\overline{).66134}$ (14) $58.4\,\overline{)56649}$ (15) $.906\,\overline{)788.22}$

Part XLVII, Exercise A

Dividing with divisors of one digit in the tenths place.

(1) $3.2\,\overline{)672}$ (2) $1.4\,\overline{)304}$ (3) $4.3\,\overline{)129}$ (4) $3.5\,\overline{)49}$

(5) $2.4\,\overline{)756}$ (6) $1.7\,\overline{).578}$ (7) $4.5\,\overline{)11.72}$ (8) $6.2\,\overline{)5.322}$

(9) $5.7\,\overline{).3876}$ (10) $3.9\,\overline{)1022.97}$ (11) $6.7\,\overline{)2.7403}$ (12) $9.4\,\overline{)779.26}$

(13) $7.6\,\overline{)44.1484}$ (14) $8.9\,\overline{)2.7325}$ (15) $8.6\,\overline{)8410.9}$

Part XLVII, Exercise B

Dividing with two digits and the decimal of the divisor in different positions.

(1) $2.1\,\overline{)71.4}$ (2) $1.3\,\overline{).269}$ (3) $2.4\,\overline{)5.76}$ (4) $2.3\,\overline{)124.2}$

(5) $4.5\,\overline{)14.375}$ (6) $3.6\,\overline{)1.512}$ (7) $4.7\,\overline{).14852}$ (8) $5.8\,\overline{)18.076}$

(9) $3.9\,\overline{)2515.5}$ (10) $6.5\,\overline{)274.95}$ (11) $7.6\,\overline{)3.5115}$ (12) $7.8\,\overline{)2.6988}$

(13) $8.3\,\overline{)8.1008}$ (14) $7.9\,\overline{).39105}$ (15) $9.8\,\overline{)52.628}$

Part XLVII, Exercise C

Dividing by one digit located in the tenths or hundredths position.

(1) $.2\,\overline{)4}$ (2) $.04\,\overline{).32}$ (3) $.3\,\overline{)4.2}$ (4) $.1\,\overline{).5}$

(5) $.02\,\overline{).46}$ (6) $.03\,\overline{)4.396}$ (7) $.28\,\overline{).5201}$ (8) $.4\,\overline{)693.5}$

(9) $.5\,\overline{).745}$ (10) $.05\,\overline{)9.326}$ (11) $.6\,\overline{)8465.1}$ (12) $.07\,\overline{)39.20}$

(13) $.8\,\overline{)6.84}$ (14) $.9\,\overline{).8263}$ (15) $.09\,\overline{)1.9038}$

Part XLVII, Exercise D

Part XLVII, Exercise D (Continued)

Dividing by two digits with a decimal expressing tenths and hundredths.

(1) 1.2)3.421 (2) 1.1)35.84 (3) .31)435.1 (4) .25)6.63

(5) .53)1.592 (6) .16).96 (7) .28)354.2 (8) .47).9494

(9) .38)114 (10) .19)76.531 (11) 6.4)593.8 (12) .92)3.9879

(13) .84)6.109 (14) 5.9)673.82 (15) 7.6)72869 (16) .76).48295

(17) 9.5)855.392 (18) 8.8).432 (19) .78)9.542 (20) .96).00863

Part XLVIII, Exercise A

Dividing by one or two digits in the tenths or hundredths position.

(1) .4).20 (2) .04).20 (3) .3)8.4 (4) .05)65.05

(5) .2)37.4 (6) .23).4647 (7) .35).7905 (8) .30).1056

(9) .03).9381 (10) .45)632.15 (11) .36)25.46 (12) 3.6)25.46

(13) .7)925.3 (14) .27).3946 (15) .08)1542.07 (16) .15)32.5

(17) .86)39.854 (18) 7.9).35825 (19) .93).58 (20) 6.5)3.25

Part XLVIII, Exercise B

Dividing by three digits and a hundredths position in the divisor.

(1) 1.32)3.96 (2) 3.13)4.453 (3) 2.25)450 (4) 4.32)92.61

(5) 5.01).3018 (6) 3.65).736 (7) 2.68)53.92 (8) 2.09)30.09

(9) 4.51)865.8 (10) 8.42) 3029 (11) 6.49)325.1 (12) 1.07).4839

(13) 8.27)65.48 (14) 3.96)65 (15) 7.85)834.2

Part XLVIII, Exercise C

Notice the divisor has tenths, hundredths or thousandths.

(1) .003 $\overline{).693}$ (2) .03 $\overline{)6.38}$ (3) .241 $\overline{).756}$ (4) .5 $\overline{).0045}$

(5) .523 $\overline{)492}$ (6) .007 $\overline{)63}$ (7) 2.08 $\overline{)6.297}$ (8) .384 $\overline{)600.2}$

(9) .26 $\overline{)50.3}$ (10) .534 $\overline{)132.01}$ (11) .614 $\overline{).946}$ (12) .007 $\overline{)78.31}$

(13) .009 $\overline{).081}$ (14) .903 $\overline{)310.8}$ (15) 3.09 $\overline{).7698}$ (16) .8 $\overline{).0032}$

(17) .007 $\overline{)73}$ (18) 1.07 $\overline{).00304}$ (19) 9.08 $\overline{).0609}$ (20) .067 $\overline{)95.87}$

Part XLIX Exercise A

In Chilton's Auto Repair Manual 1976, the Bore and Stroke are given for the cars described. Since the Bore of a cylinder is the diameter, the Bore will be divided by two in order to have the radius of the cylinder. Recall the area of a circle formula $\pi \times r^2$ = area. The Cubic Inch Displacement of a cylinder is Area X Stroke. The Cubic Inch Displacement of an Engine is Area X Stroke X Number of cylinders.

Find the Cubic Inch Displacement of the following engines. Round off the answer to have all whole numbers.

(1) Engine A has 6 cylinders, the Bore is 3.500 and the Stroke is 2.940.

(2) Engine B, 6 cylinders; Bore and Stroke is 3.680 X 3.130.

(3) Engine C, 6 cylinders; Bore and Stroke, 3.682 X 3.910

(4) Engine D is a V8; Bore and Stroke, 4.000 X 3.000.

(5) Engine E is a V8; Bore and Stroke, 4.050 X 3.784.

(6) Engine F is a V8; Bore and Stroke, 4.130 X 3.984.

(7) Engine G is a V8; Bore and Stroke, 4.360 X 3.590.

Part XLIX, Exercise A (Continued)

(8) In Chilton's Auto Repair Manual, look for "Chevrolet" in the "Contents" turn to the page code number given; it is the "Index". Under "Specifications" heading find the page number of "General engine" and turn to that page. Look under "Year" and locate 1973. For the '73 Section find the Bore and Stroke for 6-250 and find the Cubic Inch Displacement. Find the Bore and Stroke for 8-350 and determine the Cubic Inch Displacement. Find the Cubic Inch Displacement for the 8-400 and 8-454 engines by locating their Bore and Stroke numerals and computing the problems.

(9) Locate the bore and stroke information for the 8-428 engine of the 1969 Pontiac Grand Prix in Chilton's Auto Repair Manual 1976 and compute to find the Cubic Inch Displacement. Find the necessary information and compute the Cubic Inch Displacement for the 8-455 engine of the 1970 Pontiac Grand Prix. Find the necessary information, compute and find the Cubic Inch Displacement of the 1976 Ford Thunderbird 8-460 engine.

Part XLIX, Exercise B

Averaging: Add all of the items, then divide by the number of items.

(1) One student's test grades were 85; 85; and 90. What was the average of the grades?

(2) In another course the grades were 92; 76; 85; 75; find the average.

(3) The following prices were paid on Tune Up Kits: $4.98; $4.49; $2.59; $2.65; $3.49; and $4.39. Find the average price.

(4) We Fix Garage ordered the following parts: 5 Chevrolet 1967-1977,

V8 engine fuel pumps, Model Type S, Stk. No. 55-1302 T @ $6.98 each; 7 Chrysler V8 1955-76, model S fuel pumps, Stk. no. 55-1303 A @ $7.69 They were given a 7 per cent discount on the order for the Chevrolet fuel pumps and a 9 per cent discount on the Chrysler fuel pumps. They sold at the list price of the fuel pumps. What was the average profit on all of the fuel pumps?

(5) The Buick House Garage ordered the following spark plug sets: 3 sets for 1975-76, Model V6, 231 engine, stk. no. 73-2437 U @ $9.98 per set; 2 sets for 1975-76, 6 cyl. 250 engine, stk. no. 73-2442 U @ $9.98 per set; 4 sets for 1975-76 V8 260 engine, stk. no. 73-2440 Y @ $14.98 per set; 7 sets for 1975-76 V8 350 and 400 engine, stk. no. 73-2438 B @ $13.98 per set; and 5 sets for 1975-76 V8 455 engine, stk. no. 73-2439 P @ $14.98 per set. Find the average price per set.

(6) Fancy Garage ordered the following: 1974-76 Cadillac 472 and 500 engine, 7 distributor caps, stk. no. 73-2497 Y @ $6.95 each; 7 rotors, stk. no. 73-2509 P @ $2.20 each. Fancy Garage received a 5 per cent discount on the distributor caps and a 3 per cent discount on the rotors. The Garage charged the customers 15 per cent over the list price for all of the parts. What was the amount of profit on the sales? What was the average amount of profit on the sales?

(7) Antique Auto Garage ordered the following parts for Model A Ford cars. 3 sets pistons and rings size .030, stk. no. 37-4416A @ $19.89 per set with a 12 per cent discount; 5 sets of cylinder sleeves, cast iron, stk. no. 33-0608 A @ $10.49 per set with a 17 per cent discount; 7 sets complete overhaul gaskets, stk. no. 37-6059 X @ $9.49

per set with a 9 per cent discount. Find the average cost of the parts. The garage marked up the price on all of the parts 20 per cent over the list price. Find the profit made on the sale of all of the parts. Find the average sale price of the parts.

(8) Import Auto Garage ordered the following parts: 4 intake valves for 1975 Datsun, 710 engine, stk. no. 88-5269 A @ $2.19 per valve; 3 exhaust valves, stk. no. 88-7718 N @ $1.69 per valve. Fiat, 1974, coupe Spyder, 3 intake valves, stk. no. 88-6773 A @ $3.89 per valve; 4 exhaust valves, stk. no. 88-3841 R @ $4.99 per valve; 6 intake valves for Mercedes-Benz 1973 stk. no. 88-7470 T @ $4.89 per valve; 8 exhaust valves, stk. no. 88-7471 A @ $14.99 per valve. The Garage was given a 7 per cent discount on the Fiat valves, a 5 per cent discount on the Datsun valves and a 13 per cent discount on the Mercedes-Benz valves. The Garage sold the valves to customers with a ten per cent mark up on the Datsun valves, a 12 per cent mark up on the Fiat valves, and a 16 per cent mark up on the Mercedes-Benz valves. Find the average discount per valve; the average mark up per valve; the average profit per valve.

(9) Import Garage ordered two water pumps for a 1970-75, Audi 100 Stk. no. 88-5628 Y @ $17.98 each; three water pumps for a 1974-76, Audi Fix, stk. no. 88-7662 N @ $16.98 each. Four water pumps were ordered for Datsun, 1974-76, B 210, Stk. no. 88-7664 A @ $12.98 each; six water pumps were ordered for 1972-75, MGB, GT, Stk. no. 88-6128 Y @ $14.98 each. Discounts on the water pumps were 7 per cent for the Audi and Audi Fox water pumps; 6 per cent for the Datsun water pumps;

Part XLIX, Exercise B (Continued)

and a 5 per cent discount on the MGB water pumps. Find the total cost of the water pumps to the Garage. Find the average cost per water pump to the Garage. If the Garage charged a 15 per cent price above the list price of the Audi and Audi Fox water pumps; a 13 per cent price above list for the Datsun water pumps; and a 17 per cent price above list price for the MGB water pumps; what is the total profit made on all of the water pumps. Find the average amount of profit per water pump.

(10) Major Auto Repairs Garage ordered the following engine block assemblies: 6 American Motors V8, 1970-75, 304, 360 engines stk. no. 55-2214 RFE @ $499.98; 9 Buick Skylark, 1967-75, V8, 430 and 455 engine, stk. no. 55-2212 TFE @ $499.98; 7 Camaro 6 cylinders, 1967-75, 250 eng. stk. no. 55-2216 UFE @ $329.98; 5 Chevrolet 6 cyl. 1966-75, 292 eng. stk. no. 99-8239 YFE @ $399.98. The Garage was given a 25 per cent discount on all of the engine blocks. They sold 3 of the American Motors engine blocks at a 15 per cent mark up over the list price; a 17 per cent mark up over the list price on 4 of the Buick Skylark engine blocks; a 12 per cent mark up over list price of five Camaro engine blocks; and an eight per cent mark up over list price of two Chevrolet 6 cylinder engine blocks. The rest of the engine blocks were sold at list price. What was the average mark up over list price for all of the engine blocks. What was the average amount of profit per engine block?

Part XLIX, Exercise C

Part XLIX, Exercise C (Continued)

Stated problems concerning the buying of a car.

(1) The Johnson family is looking at 1977 Pontiac Bonneville Sedan, 4 doors. It is a used car with several optional accessories. They refer to the 1977 Car and Truck Appraisals book and find "Market" and "Loan" estimates but not the "Wholesale" estimates. They learn they are to add three per cent of the loan estimate to the loan estimate to get the wholesale estimated prices. The car has an air conditioner, loan value $220.00; a cruise control, loan value $40.00; a stereo w/tape, loan value $70.00. Find the wholesale price of each item and the toal wholesale price for all of the optional accessories.

(2) The Johnson family also looked at a 1977 Chevrolet Malibu Classic that has the following optional equipment: air condition, loan value $215.00; automatic transmission, loan value $100.00; Cruise Control $30.00; power brakes $30.00; power steering $60.00; and a vinyl roof $40.00 Find the wholesale price of each item and the wholesale price for all of the items.

(3) The market price for the Pontiac Bonneville includes automatic transmission, power brakes and power steering as standard equipment. Its list price, with this equipment only, was $5457.00; its market price is $5000.00 and its wholesale price is $4150.00 The market price for the optional equipment is Air Conditioner, $275.00; Cruise Control $50.00; Stereo with tape, $85.00. Find the market price for the car with its optional equipment. If the Johnson family could buy the car at six per cent above the wholesale price, what would be the purchase price? Refer to problem one for the wholesale price of the optional

Part XLIX, Exercise C (Continued)

equipment.

(4) The market price for the V8 Chevrolet Malibu Classic Coupe, the Johnson family liked, is $4300.00; the list price was $4454.00; the wholesale price, $3570.00. The car did not have any of the equipment as standard equipment included in these prices. The market price of the optional equipment is as follows: air conditioner, $270.00; automatic transmission $125.00; cruise control $40.00; power brakes $40.00; power steering $75.00; and vinyl roof $50.00. Find the market price of the car with the optional equipment. In problem two, find the wholesale price of the optional equipment and determine the wholesale price of the car with its optional equipment. If the Johnson family could buy the car at six per cent above the wholesale price, what would be the purchase price?

(5) Find the per cent increase of the list price of the Pontiac Bonneville without optional equipment above the market price. Do this by subtracting the market price $5,000.00 from the list price of $5,457.00; divide this answer by $5,000.00 to find the per cent increase. The wholesale price is $4,150.00; find the percentage increase from the wholesale price to the list pirce.

(6) Find the per cent increase of the list price of the Chevrolet Malibu without optional equipment ($4454.00) above the market price ($4300.00) by subtracting to find the difference and dividing the difference by the market price. Find the per cent increase of the list price $4454.00 above the wholesale price $3570.00

(7) Using the Buyer's Guide Reports 1978 Autos, the Flores family began

Part XLIX, Exercise C (Continued)

shopping for a new car. They looked at the prices in the book of a Mercury Cougar 4 door pillard hardtop. The dealers cost is $4257.00 and list price is $5126.00 including automatic transmission, power brakes, and power steering. Optional equipment the Flores family also wanted are: white steel belted radial tires, $49.00; AM/FM Radio, $204.00; Air Conditioner $542.00; tinted glass $61.00; and Cruise Control, $103.00. The dealers cost multiplier is .78 per cent, which will give the dealer's cost of the optional equipment. Find the total list price with options. Find the dealer's cost with options. If the car can be bought at six per cent above the dealers cost of the car with options included, find how much the Flores family would save than if they bought the car at list price including options.

(8) Using the Buyer's Guide Reports 1978 Autos the Flores family recorded the following information about the Dodge Aspen 4 Door Sedan: List Price $3865.00; dealer cost $3383.00; white steel belted radial tires $111.00; automatic transmission $286.00; power steering $148.00; power brakes $62.00; AM/FM Radio $227.00; air conditioning $494.00; tinted glass $55.00; Cruise Control $88.00. None of the above equipment was standard in the base list price. The dealer's cost multiplier is .83; find the dealer's cost including the equipment. Find the list price including the equipment. If the car can be bought at six per cent above the dealer's cost, how much would the Flores family save, instead of paying the list price?

(9) If the Flores family would have to pay the list price for the Dodge

Part XLIX, Exercise C (Continued)

Aspen, but they could buy the Mercury Cougar, described in problem seven, at 6 per cent above the dealers cost, which car would cost less to buy? How much less?

Part XLIX, Exercise D

Use the dealer's billing sheet and time/dollar conversion for these problems.

(1) A. K. Lamb, 2302 Board St., Somewhere, Tex. 35021, Ph. 481-2086, Volkswagen 1974, TML 820, mi. 43035. Remove and replace generator stk. no. 72-0661 B @ $44.95; distributor parts, tune up kit Stk. no. 73-2613 P @ $29.98; four spark plugs @ 59¢ each; spark plug cable set, stk. no. 75-2959 N @ $8.95. Labor, 2.3 hours @ $9.00 per hour. Find total cost for repairs and add 5% of parts for state tax.

(2) G. M. Vasquez, 5410 Adams St., Somewhere, Tex. 35021, Ph. 481-5673, 1975 Chrysler V8, TML 563, mil. 38,674. Remove and replace valves. Sublet repair of 7 valves @ $2.43 each. Replace with new valves, 3 intake valves, stk. no. 55-1424 N @ $2.69 each; 6 exhaust valves, stk. no. 55-1426 P @ $2.99 each. Oil changed 6 quarts @ $1.15 a quart; oil filter change @ $4.38. Labor 5.4 hours @ $13.50 an hour. Total charges and add 5 per cent of parts for state tax.

(3) R. N. Kelly, 5502 Adams, St., Somewhere, Tex. 35031, Ph. 481-7902, 54,692 miles, 1973 V W Transporter 1800. Remove and replace starter with solenoid stk. no. 72-0662 P @ $44.95; fuel pump, stk. no. 74-5155 Y @ $8.98. Labor 3.6 hours @ $13.50. Find the total charges including 5 per cent state tax. on parts.

Part XLIX, Exercise D (Continued)

(4) Rudy Rodriquez, 9021 Fame Street, Somewhere, Texas 35021, Ph. 481-0759, V W Karmann Ghia, 1975, 1600 engine, lic. TMN 075, mi 69,025. Remove and replace oil pump assembly, stk. no. 37-7374 R @ $39.98; Air Cleaner Stk. no. 73-0924 T @ $8.95; fuel pump stk. no. 88-7730 P @ $19.95. Labor 4.9 hours @ $17.00 per hour. Enter and total at proper places on the dealers billing sheet; enter 5 per cent sales tax on parts.

(5) Pete Jackson, 3502 North 18th St., Somewhere, Tex 35022, Ph. 481-6005; Buick V8, 1975, 430 engine; lic. TMP 698; mi. 73602. Remove and replace crankshaft and bearings, stk. no. 19-5978 AE @ $85.98; timing gear, stk. no. 37-5904 N @ $26.98. Increase the price of parts by 13 per cent and enter that price on the billing sheet. Oil, 6 qts. @ $1.15; oil filter @ $4.98; labor 7.3 hours @ $16.00 per hour. Enter information in proper places. Do not show the mark up or percentage increase or the per cent used in marking up the prices of parts. Add 5% tax on parts. Find the total charges.

Part L, Exercise A

Problems involving proportion.

(1) Mr. and Mrs. Brown have a car that averages 20 miles per gallon of gasoline. How many miles should they be able to drive with 4 gallons of gas?

(2) Mr. and Mrs. Jones drive a car that averages 23 miles per gallon of gas. How many miles were they able to drive, using 12 gallons of gas?

(3) The Sanchez family has a car that averages 21 miles per gallon of gas. They drove 105 miles. How many gallons of gas should they have used, if they drove under average conditions?

(4) The Morris family drove 252 miles and used 14 gallons of gas. How many miles per gallon of gas did they go?

(5) The Young family drove 238 miles and used 14 gallons of gas. How many miles per gallon of gas did they go?

(6) One car averages 21 miles per gallon of gas and uses non leaded gasoline that costs 61 cents a gallon. A different car averages 19 miles per gallon of gas, but it uses regular gas costing 54 cents a gallon. Find how much the cost of gas for one mile for each car. Which car costs less for gasoline per average mile driven?

(7) If a Ford Pinto averages 26 miles per gallon on the highway and uses non leaded gas, costing 61¢ per gallon, what will be the cost of gasoline per mile on the highway? If a Toyota averages 32 miles per gallon on the highway and uses regular gas @ 57¢ per gallon, what will be the cost of gasoline per mile on the highway?

(8) If a Plymouth Horizon averages 30 miles per gallon of gas using non leaded gas costing 62¢ per gallon, what will be the cost of gasoline per mile? How much gasoline expense would there be at 6,000 and 12,000 miles? If there must be an oil and oil filter change costing $10.50 every 6,000 miles, how much expense for gas, oil and oil filter changes would there be at 18,000 miles?

(9) If a Subaru averages 35 miles per gallon and uses regular gasoline costing 57¢ per gallon, what will be the cost of gasoline per mile?

Part L, Exercise A (Continued)

If the Subaru needs an oil and oil filter change, costing $10.50, every 3,000 miles, how much gasoline, oil and oil filter expense would there be at 6,000 miles? At 12,000 miles? At 18,000 miles?

(10) Find the differences in gasoline expenses between the Plymouth Horizon of problem 8 and the Subaru of problem 9 at 3,000 miles; 12,000 miles; and 18,000 miles. Find the differences in gasoline, oil and oil filter expenses between the Plymouth Horizon and Subaru at 6,000 miles, 12,000 miles, and 18,000 miles, when Subaru serviced every 3,000 miles and Horizon every 6,000 miles.

Part L Exercise B

All kinds of review problems

(1) 2 4 5 1 2 6 6 4 5 3 4 3 3 5
+3 -2 -3 +4 +5 -3 -4 +6 -2 +6 -3 -1 +3 +4

3
+4

(2) 4 ÷ 2 = ___ 6 ÷ 3 = ___ 8 ÷ 4 = ___ 9 ÷ 3 = ___ 12 ÷ 3 = ___

12 ÷ 6 = ___

(3) 23 42 35 52 93 25 34 48 67 89
+ 4 + 3 + 4 + 2 + 4 - 4 - 3 - 5 - 3 - 4

(4) 4 X 2 = ___ 3 X 3 = ___ 2 X 5 = ___ 5 X 3 = ___ 4 X 3 = ___

Part L, Exercise B (Continued)

(5) 6 X 2 = ___ 8 X 2 = ___ 6 X 4 = ___ 7 X 3 = ___ 9 X 4 = ___

(6) $2\overline{)42}$ $4\overline{)88}$ $5\overline{)205}$ $3\overline{)129}$ $4\overline{)168}$

(7) $2\overline{)194}$ $3\overline{)108}$ $5\overline{)215}$ $4\overline{)180}$ $3\overline{)204}$

(8) 7 X 6 = ___ 8 X 7 = ___ 9 X 6 = ___ 8 X 9 = ___ 6 X 8 = ___

(9) 42 X 3 = ___ 57 X 2 = ___ 83 X 5 = ___ 79 X 4 = ___ 68 X 4 = ___

(10) 32 X 6 = ___ 43 X 8 = ___ 54 X 7 = ___ 85 X 9 = ___ 79 X 8 = ___

(11) $23\overline{)483}$ $14\overline{)308}$ $53\overline{)954}$ $34\overline{)714}$ $32\overline{)985}$

(12) $3.8\overline{)46.24}$ $5.4\overline{)873.9}$ $2.9\overline{)9.647}$ $4.7\overline{)8296}$

$6.1\overline{).7509}$

(13)

35.82	9.826	240.5	8.057	79.61
X 3.4	X .52	X 4.1	X .63	X .35

(14) 5 + 4 = ___
X 3
___ - 15 = ___

7 + 6 = ___
X 5
___ - 5 = ___ ÷ 3 = ___

552

Part L, Exercise B (Continued)

(15) 8 + 9 - 2 = ___

X 7

____ - 24 = ___ ÷ 9 = ___

Part L, Exercise C

(1) Jones Car Loan Agency loans money on cars at 12 per cent interest for three years with monthly payments. The way he arranges the loan, he gets 12 per cent on the full original amount of the principal eventhough some of the principal is paid each month. For example:

$6000.	money loaned (Principal)
.12	per cent interest
12000	
6000	
720.00	interest for one year
X 3	years time to pay
$2160.00	total interest paid

$60.00 interest payment each month

months 36)$2160.

216

0000

00

166.666 round off to $166.67 principal payment

months 36)$6000.00

36

240

216

240

+60.00

$226.67 monthly payments except for the 36th month which would be $226.55

Prove these monthly payments as follows:

$226.67

X 36

_______ - 12¢ = _________

$6000.00 principal

+ 2160.00 interest for 36 months

____

Part L, Exercise C (Continued)

(2) Credit Union Auto Loan Company loans money to its members @ 9 per cent a year. With the same amount of money borrowed $6,000.00, as in Problem (1), find the amount of interest for one year; for three years. Find the amount the payments would be for 36 months. How much money is saved by the customer who borrows the money at 9 per cent interest compared to 12 per cent interest?

(3) Quick Auto Finance Company loans money on cars at 16 per cent interest. A customer is buying a used 1977 Mercury Marquis. With automatic transmission, power brakes, and power steering as standard equipment, the base market price of the car is $4725.00 The car has an air conditioner with a market price of $280.00 and a cruise control priced at $35.00. The company will loan money at the loan price of the car which is: $3920.00 base loan price; $210.00 air conditioner loan price; and $25.00 cruise control loan price. How much must the customer pay for the car with money not borrowed from the company? How much will the customer pay in interest with the loan being for three years? How much money must be paid to the finance company in three years time? How much will the monthly payments be? How much will the car's purchase price be after paying the interest, loan amount, plus amount of money not borrowed from the company?

(4) Mrs. Young is interested in buying a new 1978 Mercury Cougar XR7, fully equipped. She has a Buyer's Guide Reports 1978 Autos book.

Part L, Exercise C (Continued)

On page 150, the car's list price fully equipped is $6116.00 Base list price is shown as $5009.00. Find the list price of the optional equipment and multiply the optional list price by the DCM which is 78%. This gives the dealer's cost of the optional equipment. Add the dealer's cost of the optional equipment to the dealer's base cost of $4653.00 to find the dealer's cost of the fully equipped model. If the dealer will sell the car to Mrs. Young at 4% over dealer cost, what will be the price of the car. If the dealer requires 6% over dealer cost, what will be the cost?

(5) Mrs. Young is also interested in a Ford Thunderbird 2 door hardtop. With the following information, find the price of the Thunderbird at 4% above dealer cost and at 6% above dealer cost.

List price fully equipped	$6470.00
Base list price	$5411.00
Dealer Cost Multiplier	78%
Dealer Cost Base Price	$4494.00

(6) Mrs. Young has an opportunity to buy a new 1977 Thunderbird with dealer cost prices as follows: base price $4205.00, optional equipment includes air conditioner $426.00; power door locks $57.; power windows $90.; Radio with tape $270.; corner lights $36.; rear window defroster $69.; vinyl roof $105.; tilt steering $50.; tinted glass $54.; and tinted windshield $51. If Mrs. Young can buy this car @ 4% above dealer cost, how much is that amount? If she must

pay 6% above dealer cost, how much is that amount?

(7) First Come Garage ordered 3 camshaft kits for a Chevrolet V8, 350 engine stk. no. 37-7037 B @ $104.95 per kit; 2 camshaft kits for Dodge V8, 318 engine Stk. no. 37-77044 Y @ $107.95 per kit; and 4 kits for a Ford V8, 352 engine, stk. no. 37-7051 T @ $119.95 per kit. The Garage is given a 4 per cent discount and has sold each camshaft kit contents at 9% above the listed price. How much money has the company made from the sale of the parts. If labor involved in removing and replacing each camshaft was 3.2 hours at $14.00 per hour, how much was each customer charged?

(8) J. T. Parks of 2282 Avenue K, Somewhere, Tex. 32806, Ph. 302-7205 brought his 1974 Chrysler V8, Lic. TML 532 to We Fit It Garage. The mechanic worked 4.8 hours, charging $14.50 for labor. He replaced the coil stk. no. 75-3028 Y $13.88; starter solenoid switch stk. no. 55-0771 P, $5.95; and replaced the distributor with a dual point distributor stk. no. 55-1517 W @ $49.95. The spark plugs were replaced with stk. no. 55-1128 B set of Fire Injectors @ $15.80. The Garage was given a discount of 13 per cent on all parts used. Find the total bill with five per cent state tax. How much profit did the Garage make off of the parts?

(9) At the We Fix It Garage four mechanics are hired on a forty hour week basis at $8.50 an hour. If two mechanics each worked 36 hours

on cars in which the customers were charged $13.50 an hour and the other four hours they were on duty at the Garage but not working on cars, how much did garage make on the two? The other two mechanics each worked on cars for 32 hours in which the customers were charged $13.50 an hour. The other eight hours the mechanics were on duty but were without cars to repair. How much money was taken in by the labor of all four mechanics? How much did the Garage pay each mechanic a week? How much money was paid all four mechanics for one week? How much money in one week was made by the Garage from the labor of the four mechanics, after the mechanics were paid?

(10) At the We Fix It Garage, the four mechanics were given a raise to $9.00 an hour, and the labor charge to customers was raised to $14.50 an hour. Business fell off for one week in which two mechanics each worked 27 hours, and the other two mechanics each worked on cars for 23 hours. Each was paid for forty hours work that week, since they were on duty. They cleaned up their area, replaced their tools, and waited for business during their spare time. How much money did their labor take in that week? How much were each of them paid? How much were all four paid? Did the Garage make a profit or lose money from the labor of the mechanics that week? ___________ How much? _____________.

TEACHER MATH EXERCISE MANUAL

Part I, Exercise A

(1) 2 nuts (2) 3 nuts (3) 3 nuts (4) 5 nuts

(5) 5 nuts (6) 6 nuts; 4 + 2 = 6

(7) $\begin{array}{r} 3 \\ +\ 3 \\ \hline 6 \end{array}$ $3 + \underline{3} = \underline{6}$

(8) $\begin{array}{r} \underline{5} \\ +\ 1 \\ \hline 6 \end{array}$ $\underline{5} + 1 = 6$

(9) 8 nuts

(10) $\begin{array}{r} 3 \\ +\ 5 \\ \hline 8 \end{array}$ $3 + \underline{5} = 8$

(11) $\begin{array}{r} 1 \\ +\ 7 \\ \hline 8 \end{array}$ $1 + \underline{7} = 8$

(12) $\begin{array}{r} 5 \\ +\ 4 \\ \hline 9 \end{array}$ $5 + \underline{4} = 9$

(13) $\begin{array}{r} 3 \\ +\ 5 \\ \hline 8 \end{array}$ $\underline{3} + \underline{5} = 8$

(14) $\begin{array}{r} 5 \\ +\ 2 \\ \hline 7 \end{array}$ $\underline{5} + \underline{2} = 7$

(15) $\begin{array}{r} 6 \\ +\ 3 \\ \hline 9 \end{array}$ $\underline{6} + \underline{3} = 9$

Part I, Exercise B

(1) 11 (2) 12 (3) 13 (4) 15 (5) 17

(6) 14 (7) 19 (8) 16 (9) 15; $\underline{3}$ nuts + $\underline{1}$ short screw and $\underline{2}$ nuts = $\underline{15}$

(10) 15; 1 short screw and 3 nuts + 2 nuts = 15

(11) 19; 1 short screw and 5 nuts + 4 nuts = 19

(12) 29; 4 nuts + 2 short screws and 5 nuts = 29

(13) 28; 2 short screws and 1 nut + 7 nuts = 28

Part I, Exercise B (Continued)

(14) 40; 8 nuts + 3 short screws and 2 nuts = 40

(15) 36; 2 short screws and 9 nuts + 7 nuts = 36

(16) 52; 4 short screws and 3 nuts + 9 nuts = 52

(17) 89; 8 short screws and 7 nuts + 2 nuts = 89

(18) 62; 4 nuts + 5 short screws and 8 nuts = 62

(19) 84; 7 short screws and 7 nuts + 7 nuts = 84

(20) 95; 6 nuts + 8 short screws and 9 nuts = 95

Part I, Exercise C

(1) 21 (2) 23 (3) 34 (4) 45 (5) 69 (6) 69

(7) 79; 5 short screws and 4 nuts + 2 short screws and 5 nuts = 79

(8) 99; 6 short screws and 3 nuts + 3 short screws and 6 nuts = 99

(9) 100; 7 short screws and 8 nuts + 2 short screws and 2 nuts = 100

(10) 130; 9 short screws and 3 nuts + 3 short screws and 7 nuts = 130

(11) 76 (12) 89 (13) 102 (14) 122 (15) 161 (16) 68

(17) 176 (18) 132 (19) 106 (20) 103

Part I, Exercise D

(1) 101 (2) 104 (3) 208 (4) 409 (5) 311

(6) 512; 7 nuts + 5 long screws and 5 nuts = 512

(7) 712; 7 long screws and 8 nuts + 4 nuts = 712

(8) 613; 6 long screws and 7 nuts + 6 nuts = 613

(9) 814; 9 nuts + 8 long screws and 5 nuts = 814

(10) 332; 3 long screws and 2 short screws and 4 nuts + 8 nuts = 332

(11) 949 (12) 690 (13) 498 (14) 600 (15) 401 (16) 295

Part I, Exercise D (Continued)

(17) 864 (18) 993 (19) 584 (20) 803

Part I, Exercise E

(1) 122 (2) 155 (3) 478 (4) 399 (5) 762

(6) 681; 6 long screws, 2 short screws, 3 nuts + 5 short screws, 8 nuts = 681

(7) 503; 4 long screws, 8 short screws, and 7 nuts + 1 short screw and 6 nuts = 503

(8) 892; 8 long screws, 7 short screws, and 5 nuts + 1 short screw and 7 nuts = 892

(9) 993; 9 long screws, 5 short screws, and 4 nuts + 3 short screws and 9 nuts = 993

(10) 1,052; 9 long screws, 9 short screws, and 4 nuts + 5 short screws and 8 nuts = 1,052

(11) 681 (12) 887 (13) 361 (14) 981 (15) 1,002 (16) 811

(17) 471 (18) 972 (19) 831 (20) 1,004

Part I, Exercise F

(1) 111 (2) 219 (3) 239 (4) 399 (5) 498

(6) 688; 4 nuts + 3 short screws and 2 nuts + 6 long screws, 5 short screws and 2 nuts = 688

(7) 876; 4 short screws and 7 nuts + 3 nuts + 8 long screws, 2 short screws and 6 nuts = 876

(8) $\begin{array}{r}635\\43\\+\ 7\\\hline 685\end{array}$ (9) $\begin{array}{r}13\\768\\+\ 5\\\hline 786\end{array}$ (10) $\begin{array}{r}6\\372\\+\ 69\\\hline 447\end{array}$ (11) 899 (12) 496 (13) 427

Part I, Exercise F (Continued

(14) 562 (15) 744 (16) $\begin{array}{r}583\\79\\5\\\hline 667\end{array}$ (17) $\begin{array}{r}9\\953\\74\\\hline 1036\end{array}$ (18) $\begin{array}{r}33\\66\\748\\\hline 847\end{array}$

(19) $\begin{array}{r}376\\80\\5\\\hline 461\end{array}$ 376 + 80 + 5 = 461 (20) $\begin{array}{r}9\\83\\834\\\hline 926\end{array}$ 9 + 83 + 834 = 926

Part II, Exercise B

(1) 8 (2) 9 (3) 9 (4) 10 = 1 short screw

(5) 11 = 1 & 1 (6) 13 = 1 & 3 (7) 15 = 1 & 5 (8) 12=1 & 2

(9) 7 (10) 13=1 & 3 (11) 30 (12) 23 (13) 35 (14) 28

(15) 23 (16) 14 (17) 44 (18) 66 (19) 96 (20) 85

(21) 362 (22) 489 (23) 125 (24) 662 (25) 834 (26) 528

(27) 456 (28) 864 (29) 2094 (30) 9016

Part III, Exercise A

(1) 7 (2) 34 (3) 235 (4) 631 (5) 791 (6) 404

(7) 861 (8) 1095 (9) 977 (10) 634

Part IV, Exercise AA

Addition problems with long screws counting 100's, short screws 10's and nuts 1's. The answers should be numerals only. Ex. 5 nuts + 8 nuts = 13

(1) 3 nuts + 4 nuts = 7 nuts 5 nuts + 4 nuts = 9 nuts

2 nuts + 3 nuts = 5 nuts 5 nuts + 5 nuts = 10

1 short screw and 3 nuts + 3 nuts = 16

Part IV, Exercise AA (Continued)

2 short screws and 5 nuts + 4 short screws and 4 nuts = 69

3 short screws and 3 nuts + 5 short screws and 2 nuts = 85

5 short screws and 4 nuts + 5 short screws and 3 nuts = 107

1 long screw, 3 short screws, 4 nuts + 3 long screws, 5 short screws, 2 nuts = 486

2 long screws, 5 short screws, 3 nuts + 1 long screw, 3 short screws, 5 nuts = 388

2 long screws, 5 short screws, 5 nuts + 1 long screw, 4 short screws, 5 nuts = 400

(2) 1 long screw, 2 short screws, 6 nuts + 1 long screw, 7 short screws, 7 nuts = 303

2 long screws, 8 short screws, 7 nuts + 1 long screw, 6 short screws, 9 nuts = 456

3 long screws, 9 short screws, 6 nuts + 4 short screws, 7 nuts = 443

2 long screws, 8 short screws, 6 nuts + 1 long screw, 9 short screws, 8 nuts = 484

1 long screw, 7 short screws, 6 nuts + 2 long screws, 2 short screws, 9 nuts = 405

8 short screws, 7 nuts + 3 long screws, 8 short screws, 6 nuts = 473

3 short screws, 9 nuts + 2 long screws, 9 short screws, 4 nuts = 333

2 long screws, 7 nuts + 2 long screws, 9 nuts = 416

Part IV, Exercise AA (Continued)

3 long screws, 4 short screws + 1 long screw, 8 nuts = $\underline{448}$

1 long screw, 6 short screws, 7 nuts + 3 long screws, 2 short screws, 5 nuts = $\underline{492}$

Part IV, Exercise A

(1) 7 (2) 12 (3) 18 (4) 14 (5) 28 (6) 91

(7) $\begin{array}{r} 8 \\ \underline{3} \\ +\ 24 \\ \hline 35 \end{array}$ $8 + \underline{3} + 24 = 35$ (8) $\begin{array}{r} 13 \\ 275 \\ 14 \\ \hline 302 \end{array}$ (9) $\begin{array}{r} \underline{92} \\ 43 \\ 359 \\ \hline 494 \end{array}$ $\underline{92} + 43 + 359 = 494$

(10) 1044 (11) $\begin{array}{r} 567 \\ \underline{77} \\ 72 \\ \hline 716 \end{array}$ $567 + \underline{77} + 72 = \underline{716}$ (12) 3454

(13) 4461 (14) $\begin{array}{r} \underline{531} \\ 359 \\ +\ 5962 \\ \hline 6852 \end{array}$ $\underline{531} + 359 + 5962 = 6852$

(15) $\begin{array}{r} 89 \\ \underline{0} \\ 357 \\ \hline 446 \end{array}$ $89 + \underline{0} + 357 = 446$ (16) 9362

(17) 7313 (18) $\begin{array}{r} 4907 \\ \underline{72} \\ +\ 895 \\ \hline 5874 \end{array}$ $\underline{72} + 895 + 4907 = 5874$

(19) $\begin{array}{r} 8876 \\ \underline{0} \\ 387 \\ \hline 9263 \end{array}$ $8876 + \underline{0} + 387 = \underline{9263}$

(20) 3838

Part V, Exercise CC

Addition Problems using the Hundredths Place for Chalkboard Drill.

Part V, Exercise CC (Continued)

(1) .02 + .01 = .03 .02 + .03 = .05 .04 + .02 = .06
.03 + .05 = .08 .05 + .02 = .07 .05 + .01 = .06
.02 + .05 = .07 .06 + .03 = .09 .04 + .05 = .09
.05 + .05 = .10 .05 + .07 = .12 .08 + .06 = .14
.06 + .09 = .15 .07 + .03 = .10 .08 + .06 = .14
.07 + .09 = .16

(2) 1.03 + .04 = 1.07 1.05 + 1.04 = 2.09 2.02 + 1.03 = 3.05
.07 + 2.02 = 2.09 3.06 + 2.12 = 5.18 5.23 + 3.26 = 8.49
7.06 + 3.85 = 10.91 9.74 + 0.08 = 9.82 6.27 + 2.86 = 9.13
8.69 + 1.38 = 10.07 6.29 + 3.78 = 10.07 4.95 + 5.86 = 10.81
9.38 + 4.96 = 14.34 7.98 + 5.34 = 13.32 8.56 + 5.79 = 14.35
6.83 + 9.78 = 16.61

Part V, Exercise A

(1) 1477 (2) 2748 (3) 4118 (4) 2075 (5) 2551 (6) 3414
(7) 2086 (8) 9083 (9) 10,095 (10) 5,832 + 123 + 38 + 7 = 6,000

Part V, Exercise B

(1) $1.80 (2) $11.50 (3) $18.00 (4) $7.70 (5) $18.20
(6) $44.80 (7) $70.30 (8) $56.00 (9) $75.60 (10) $119.70
(11) $77.70 (12) $58.90 (13) $38.40 (14) $31.35 (15) $33.00
(16) $40.50 (17) $15.60 (18) $39.95 (19) $77.40 (20) $132.75

Part VI, Exercise A

(1) $181.06 (2) $44.46 (3) $90.70 (4) $202.91 (5) $233.50

Part VI, Exercise B

(1) $181.53 (2) $177.69 (3) $131.97 (4) $73.30 (5) $112.23

Part VI, Exercise C

(1) $1,925.00 (2) $273.60 (3) $157.83 (4) $1,036.50

(5) $236.25

Part VII, Exercise C

(1) Carburetor Adapter 14-1016 R $8.49; Distributor for a Jeep 89 - 4424 B $29.95; clutch plate 87 - 9850 N $15.98; Total - $54.42

(2)

NAME OF CAR	CONNECTING ROD STK. NO.	PRICE
1963 Buick V8 Special	31-1333 X	$13.98
1970 Buick 6 Cyl. 250 engine	37 - 3804 R	$ 6.98
1971 Cadillac .020	37 - 5403 Y	$23.98
Chevrolet Chevelle V8 1974 Std.	31 - 1196 Y	$ 9.98
Chrysler 1972 V8 360 engine .010	31 - 1355 P	$ 9.98
		$64.90

Part VII, Exercise C (Continued)

(3)	NAME OF CAR	MAIN BEARINGS STK. NO.	PRICE
	1963 Buick V8 Special	30-0525 P	$12.98
	1970 Buick 6 Cyl. 250 engine	37-2176 T	$16.98
	1971 Cadillac .020	37-5433 N	$21.98
	Chevrolet Chevelle V8 1974 Std.	30-0465 R	$11.98
	Chrysler 1972 V8 360 engine .010	37-6682 W	$10.95
			$74.87

(4)	NAME OF CAR	BLOCK ASSEMBLIES	PRICE
	1973 Chevrolet 350 V8	99-8189 NFE	$299.98
	1975 Chrysler 440 engine Std.	55-2212 TFE	$499.98
	1972 Mustang 240 engine	99-5768 RFE	$339.98
	1973 Mercury 351 W engine	55-2215 WFE	$449.98
			$1,589.92

(5) 1964 Volkswagen 40 h.p. engine -- Valve push rods - 89-2576 A $0.99; Valve lifters - 89-2577 R $1.59; Intake valve - 89-0472 N $1.49; Exhaust valve - 89-0473 T $3.29; Rocker Arm Assembly - 37-6840 P $54.98; Crankshaft - 89-4063 Y $64.98 TOTAL $127.32

Part VIII, Exercise B

(1) $3500.00 (2) $2480.00 (3) $2950.00 (4) $3530.00

(5) $1355.00

Part IX, Exercise A

(1) $73.91 (2) $180.64 (3) $92.06 (4) $113.44 (5) $68.56

Part IX, Exercise B

(1) 20 (2) 19 (3) 17 (4) 13 (5) 14 (6) 16 (7) 15
(8) 25 (9) 38 (10) 21 (11) 49 (12) 57 (13) 100
(14) 8/10 (15) 263 (16) 439 8/15 (17) 748 3/100
(18) 984 69/100 (19) 375 44/100 (20) 1598 44/100
(21) 2455 83/100 (22) 7674 5/100 (23) 10,214 3/10
(24) 16,893 34/100 (25) 45,678 92/100

Part X Exercise A

(1) $678.68 (2) $180.04 (3) $42.30 (4) 151.94 (5) $96.96

Part X, Exercise B

(1) $3075.00 (2) $3950.00 (3) $1655.00 (4) $1120.00 - Fair Market Price $775.00 - Wholesale Price

(5) $2405.00 Fair Market Price $1620.00 - Loan Price

Part XI, Exercise A Test

Enter numerals in the spaces that identify written numerals and fractions.

(1) two 2; five 5; zero 0; four 4; one 1; three 3; six 6; eight 8; seven 7; nine 9; twenty 20; ten 10; eleven 11; thirteen 13; twelve 12; fifteen 15; fourteen 14; seventeen 17; nineteen 19; sixteen 16; eighteen 18; twenty-two 22; twenty-four 24; twenty-five 25; twenty-three 23.

(2) thirty-eight 38; forty-nine 49; fifty-seven 57; sixty-five 65; seventy-six 76; eighty-three 83; ninety-two 92; thirty-seven 37; fifty-eight 58; sixty-nine 69; forty-six 46; ninety-five 95;

Part XI, Exercise A Test (Continued)

twenty-eight 28; forty-seven 47; sixty-eight 68;

(3) one hundred 100; two hundred three 203; six hundred five 605; four hundred two 402; five hundred four 504; five hundred one 501; three hundred seven 307; nine hundred six 906; seven hundred eight 708; eight hundred nine 809; five hundred twelve 512; eight hundred ten 810; four hundred thirteen 413; six hundred fourteen 614; nine hundred eighteen 918;

(4) one-third 1/3; two-fourths 2/4; one-half 1/2; one-fifth 1/5; three-fourths 3/4; four-fifths 4/5; one-fourth 1/4; one-eights 1/8; three-ninths 3/9; three-eights 3/8; nine-tenths 9/10; six twelfths 6/12; one-fifteenths 1/15; two-twentieths 2/20; four-seventeenths 4/17; three-sixteenths 3/16; five-eighteenths 5/18; seven-nineteenths 7/19; twelve fourteenths 12/14; eleven twenty-first 11/21; thirteen-twenty-fourths 13/24.

(5) Fifteen and twenty-three hundredths 15 23/100; two and seventeen-hundredths 2 17/100; forty-eight and thirteen hundredths 48 13/100 thirty-seven and sixteen hundredths 37 16/100; ninety-eight and sixty-five hundredths 98 65/100; twenty-three and ninety seven hundredths 23 97/100; eighteen and sixty-seven hundredths 18 67/100; fifty-two and seventy-six hundredths 52 76/100; twelve and eleven hundredths 12 11/100; Eighty-seven and ninety-six hundredths 87 96/100.

Part XI, Exercise A Test (Continued)

(6) four ten thousandths 4/10,000; twelve ten thousandths 12/10,000; thirty ten thousandths 30/10,000; fifty-eight ten thousandths 58/10,000; one hundred three ten thousandths 103/10,000; four hundred ninety-two ten thousandths 492/10,000; seven hundred eighty-six ten thousandths 786/10,000; ten ten thousandths 10/10,000.

Part XI, Exercise B Test

Enter on problem a Dealer's Billing Sheet and total the bill; use the Time/Dollar Conversion Table and solve the following problems.

(1) Tom Case, 2341 Hines St., Somewhere, Tex. 20374, ph. 328-5061, Lic. TFL 204, Mi. 43,402, 1971 Volkswagen, remove and replace camshaft and timing gear stk. no. 89-2553 P 57 HP, @ $17.98, Labor 2.6 hours $12.00 per hour

Total $67.16

(2) Clean Laundry, 302 South 4th St., Somewhere, Tex. 20373, Ph. 320-6776, Mr. Ken Lowe, 1053 Washington, Somewhere, Tex. 20374, Ph. 320-3058, V W Van 1600, 1972, Lic. 6L-4301, Mi. 69,408, remove and replace crankshaft, main and rod bearings, 2 connecting rods. Crankshaft stk. no. 89-4427 N @ $64.98; Main Bearings Stk. no. 89-0694 U 1 set @ $7.49; Rod Bearings, Stk. no. 89-0690 B 1 set @ $2.98; 2 connecting rods stk. no. 89-4429 A each @ $12.98; oil 5 qts. @ $1.13; labor 4.2 hours @ $13.00 per hour.

Total $161.66

Part XI, Exercise B Test (Continued)

(3) Miss Jane Baker, 1428 South 12th St., City, 20374, Ph. 320-4602; 1975 Buick V8, 455 eng. Lic. TLM 098; mi. 28,697, remove and replace crankshaft, stk. no. 19-5978 AE @ $85.98; connecting rod bearings, stk. no. 31-1334 N @ $12.98 per set; main bearings, stk. no. 37-5428 N @ $14.98 per set; labor 5.6 @ $15.50 per hour.
(Total $200.74)

(4) Mrs. Elaine Turner, 2853 North 40th St., City, 20378, Ph. 320-2901, 1974 Pontiac V8, 350 eng.; lic. TLN 325, Mi. 51,302, remove and replace crankshaft, main & connecting rod bearings, timing chain and gear set. Crankshaft with main & connecting rod bearings, 1 kit stk. no. 99-6168 AFE @ $90.98; timing chain and gears stk. no. 37-4267 Y @ $41.98; replace oil 6 qts. @ $1.13 a qt.; oil filter stk. no. 55-1914 N @ $1.98; labor 8.7 hours @ $16.00 an hour.
(Total $280.92)

(5) Bob Thompson, 2740 North 3rd St., Somewhere, Tex. 20378, Ph. 320-4603, 1974 Ford V8, 351 c. eng. lic. TLP-023; mi. 83,506; remove and replace oil pump, stk. no. 37-6875 W @ $24.98; camshaft bearings 37-6738 W 1 set @ $5.98; 4 valves exhaust stk. no. 55-2281 Y @ $3.59 each; 2 valves intake, stk. no. 55-2281 Y @ $3.59 each; Camshaft Stk. No. 37-6395 N @ $32.98; 4 exhaust & 6 intake valves sublet to Grinding Service @ $3.25 each; labor 3.8 hours @ $14.50 per hour.
(Total $173.08)

Part XI, Exercise C Test

Solve the following addition problems.

(1) 1975 6 cyl. Gremlin 2 D. Sedan market price $1900 with auto/trans. $90. and vinyl roof $40. How much is the car with the equipment listed? $2030.00

(2) 1974 V8 Cadillac Calais H Top 2 D Mkt. Price $4075 with cruise control $55; leather upholstery $85; power door locks $40; stereo w/tape $90. What is the total market price of the car? $4345.00

(3) 1976 V8 Chevrolet Camaro Spt. Cpe 2D mkt price $4100 a/c $240; cruise control $35; pwr stg. $35; vinyl roof $45. What is the total market price? $4455.00

(4) 1976 Ford Granada 6 cyl. 4 D Sedan, mkt price $3325. a/c $240; auto/trans. $120; Cruise cont $35; pwr brakes $35; pwr str. $55. What is the total market price? $3810.00

(5) 1975 Mercury Comet 8 cyl. 2 dr. Sed., mkt price $2150. a/c $200; auto/trans. $100; vinyl roof $45. Give the total market price $2495.00

Part XII, Exercise A

(1) 1 (2) 4 (3) 7 (4) 1 short screw 5 nuts

(5) 1 short screw 2 nuts (6) 3 short screws 5 nuts

Part XII, Exercise A (Continued)

(7) 7 short screws 3 nuts (8) 4 short screws

(9) 5 nuts (10) 5 short screws 4 nuts

(11) 1 long screw 1 short screw 2 nuts

(12) 2 long screws 1 short screw 4 nuts

(13) 1 long screw 2 short screws 2 nuts

(14) 3 short screws 5 nuts

(15) 3 long screws 1 nut

(16) $\begin{array}{r} 756 \\ -\ 232 \\ \hline 524 \end{array}$ (17) $\begin{array}{r} 545 \\ -\ 342 \\ \hline 203 \end{array}$ (18) $\begin{array}{r} 834 \\ -\ 134 \\ \hline 700 \end{array}$

(19) $\begin{array}{r} 465 \\ -\ 234 \\ \hline 231 \end{array}$ - $\begin{array}{l} 4 \text{ long screws } 6 \text{ short screws } 5 \text{ nuts} \\ 2 \text{ long screws } 3 \text{ short screws } 4 \text{ nuts} \\ 2 \text{ long screws } 3 \text{ short screws } 1 \text{ nut} \end{array}$

(20) $\begin{array}{r} 673 \\ -\ 323 \\ \hline 350 \end{array}$ - $\begin{array}{l} 6 \text{ long screws } 7 \text{ short screws } 3 \text{ nuts} \\ 3 \text{ long screws } 2 \text{ short screws } 3 \text{ nuts} \\ 3 \text{ long screws } 5 \text{ short screws } 0 \text{ nuts} \end{array}$

Part XII Exercise B

(1) $\begin{array}{r} 579 \\ -\ 354 \\ \hline 225 \end{array}$ (2) $\begin{array}{r} 857 \\ -\ 824 \\ \hline 33 \end{array}$ (3) $\begin{array}{r} 998 \\ -\ 96 \\ \hline 902 \end{array}$ (4) $\begin{array}{r} 969 \\ -\ 929 \\ \hline 40 \end{array}$

(5) $\begin{array}{rl} & 4 \text{ long screws } 8 \text{ short screws } 6 \text{ nuts} = 486 \\ - & 2 \text{ long screws } 6 \text{ short screws } 4 \text{ nuts} = 264 \\ \hline & 2 \text{ long screws } 2 \text{ short screws } 2 \text{ nuts} \quad 222 \end{array}$

(6) $\begin{array}{rl} & 7 \text{ long screws } 4 \text{ short screws } 8 \text{ nuts} = 748 \\ - & 5 \text{ long screws } 3 \text{ short screws } 4 \text{ nuts} = 534 \\ \hline & 2 \text{ long screws } 1 \text{ short screw } 4 \text{ nuts} = 214 \end{array}$

(7) $\begin{array}{rl} & 8 \text{ long screws } 7 \text{ short screws } 6 \text{ nuts} = 876 \\ - & 6 \text{ long screws } 3 \text{ short screws } 3 \text{ nuts} = 633 \\ \hline & 2 \text{ long screws } 4 \text{ short screws } 3 \text{ nuts} = 243 \end{array}$

Part XII, Exercise B (Continued)

(8) 5 long screws 9 short screws 7 nuts = 597
- 2 long screws 6 short screws 5 nuts = 265
3 long screws 3 short screws 2 nuts = 332

(9) 9 long screws 9 short screws 8 nuts = 998
- 4 long screws 7 short screws 4 nuts = 474
5 long screws 2 short screws 4 nuts = 524

(10) 6 long screws 5 short screws 9 nuts = 659
- 4 long screws 2 short screws 8 nuts = 428
2 long screws 3 short screws 1 nut = 231

(11) 212 (12) 334 (13) 453 (14) 805 (15) 750 (16) 205

(17) $\begin{array}{r} 657 \\ -\ 234 \\ \hline 423 \end{array}$ (18) $\begin{array}{r} 598 \\ -\ 363 \\ \hline 235 \end{array}$ (19) $\begin{array}{r} 974 \\ -\ 352 \\ \hline 622 \end{array}$ (20) $\begin{array}{r} 997 \\ -\ 274 \\ \hline 723 \end{array}$

Part XII, Exercise C

(1) 1 (2) 9 (3) 6 (4) 18 (5) 19 (6) 86 (7) 49

(8) 66 (9) 78 (10) 29 (11) $\begin{array}{r} 45 \\ -\ 7 \\ \hline 38 \end{array}$ (12) $\begin{array}{r} 27 \\ -\ 9 \\ \hline 18 \end{array}$ (13) $\begin{array}{r} 62 \\ -\ 5 \\ \hline 57 \end{array}$

(14) 58 (15) $\begin{array}{r} 24 \\ -\ 9 \\ \hline 15 \end{array}$ (16) $\begin{array}{r} 93 \\ -\ 8 \\ \hline 85 \end{array}$ (17) $\begin{array}{r} 62 \\ -\ 4 \\ \hline 58 \end{array}$ (18) $\begin{array}{r} 92 \\ -\ 3 \\ \hline 89 \end{array}$

(19) $\begin{array}{r} 48 \\ -\ 9 \\ \hline 39 \end{array}$ (20) 75

Part XII, Exercise D

(1) 338 (2) 117 (3) 579 (4) 846 (5) 228 (6) 307

(7) 909 (8) 396 (9) 798 (10) 98 (11) 99 (12) 198

(13) 899 (14) 92 (15) 766 (16) 507 (17) 399 (18) 299

(19) 197 (20) 95

Part XIII, Exercise A

(1) $\begin{array}{r} 392 \\ -\ 63 \\ \hline 329 \end{array}$ (2) $\begin{array}{r} 570 \\ -\ 41 \\ \hline 529 \end{array}$ (3) $\begin{array}{r} 845 \\ -\ 29 \\ \hline 816 \end{array}$ (4) $\begin{array}{r} 654 \\ -\ 27 \\ \hline 627 \end{array}$ (5) $\begin{array}{r} 423 \\ -\ 28 \\ \hline 395 \end{array}$ (6) $\begin{array}{r} 732 \\ -\ 34 \\ \hline 698 \end{array}$

(7) $\begin{array}{r} 965 \\ -\ 87 \\ \hline 878 \end{array}$ (8) $\begin{array}{r} 186 \\ -\ 89 \\ \hline 97 \end{array}$ (9) $\begin{array}{r} 579 \\ -\ 79 \\ \hline 500 \end{array}$ (10) $\begin{array}{r} 437 \\ -\ 89 \\ \hline 348 \end{array}$

(11) 617; $\begin{array}{rrr} \underline{6}\text{ long screws} & \underline{9}\text{ short screws} & \underline{2}\text{ nuts} \\ - & \underline{7}\text{ short screws} & \underline{5}\text{ nuts} \\ \hline \underline{6}\text{ long screws} & \underline{1}\text{ short screw} & \underline{7}\text{ nuts} \end{array}$

(12) $\begin{array}{r} 546 \\ -\ \underline{2}8 \\ \hline \underline{5}1\underline{8} \end{array}$ $\begin{array}{rrr} \underline{5}\text{ long screws} & \underline{4}\text{ short screws} & \underline{6}\text{ nuts} \\ - & \underline{2}\text{ short screws} & \underline{8}\text{ nuts} \\ \hline \underline{5}\text{ long screws} & \underline{1}\text{ short screw} & \underline{8}\text{ nuts} \end{array}$

(13) $\begin{array}{r} 873 \\ -\ 7\underline{5} \\ \hline \underline{7}98 \end{array}$ $\begin{array}{rrr} \underline{8}\text{ long screws} & \underline{7}\text{ short screws} & \underline{3}\text{ nuts} \\ - & \underline{7}\text{ short screws} & \underline{5}\text{ nuts} \\ \hline \underline{7}\text{ long screws} & \underline{9}\text{ short screws} & \underline{8}\text{ nuts} \end{array}$

(14) $\begin{array}{r} 947 \\ -\ 48 \\ \hline \underline{8}99 \end{array}$ $\begin{array}{rrr} \underline{9}\text{ long screws} & \underline{4}\text{ short screws} & \underline{7}\text{ nuts} \\ & \underline{4}\text{ short screws} & \underline{8}\text{ nuts} \\ \hline \underline{8}\text{ long screws} & \underline{9}\text{ short screws} & \underline{9}\text{ nuts} \end{array}$

(15) 85; $\begin{array}{rrr} \underline{1}\text{ long screw} & \underline{5}\text{ short screws} & \underline{9}\text{ nuts} \\ & \underline{7}\text{ short screws} & \underline{4}\text{ nuts} \\ \hline & \underline{8}\text{ short screws} & \underline{5}\text{ nuts} \end{array}$

(16) 395; $\begin{array}{rrr} \underline{4}\text{ long screws} & \underline{8}\text{ short screws} & \underline{2}\text{ nuts} \\ & \underline{8}\text{ short screws} & \underline{7}\text{ nuts} \\ \hline 3\text{ long screws} & 9\text{ short screws} & 5\text{ nuts} \end{array}$

(17) $\begin{array}{r} 2\underline{4}5 \\ -\ 59 \\ \hline \underline{1}8\underline{6} \end{array}$ $\begin{array}{rrr} \underline{2}\text{ long screws} & \underline{4}\text{ short screws} & \underline{5}\text{ nuts} \\ & \underline{5}\text{ short screws} & \underline{9}\text{ nuts} \\ \hline 1\text{ long screw} & 8\text{ short screws} & 6\text{ nuts} \end{array}$

(18) $\begin{array}{r} 3\underline{4}4 \\ -\ 6\underline{6} \\ \hline \underline{2}78 \end{array}$ $\begin{array}{rrr} \underline{3}\text{ long screws} & \underline{4}\text{ short screws} & \underline{4}\text{ nuts} \\ & \underline{6}\text{ short screws} & \underline{6}\text{ nuts} \\ \hline 2\text{ long screws} & 7\text{ short screws} & 8\text{ nuts} \end{array}$

Part XIII, Exercise A (Continued)

(19)
$$\begin{array}{r} 76\underline{2} \\ -\ \underline{94} \\ \underline{6}68 \end{array} \qquad \begin{array}{rrr} \underline{7}\text{ long screws} & \underline{6}\text{ short screws} & \underline{2}\text{ nuts} \\ & \underline{9}\text{ short screws} & \underline{4}\text{ nuts} \\ \hline 6\text{ long screws} & 6\text{ short screws} & 8\text{ nuts} \end{array}$$

(20)
$$\begin{array}{r} 5\underline{4}7 \\ -\ 3\underline{9} \\ \hline \underline{5}08 \end{array} \qquad \begin{array}{rrr} \underline{5}\text{ long screws} & \underline{4}\text{ short screws} & \underline{7}\text{ nuts} \\ & \underline{3}\text{ short screws} & \underline{9}\text{ nuts} \\ \hline 5\text{ long screws} & 0\text{ short screws} & 8\text{ nuts} \end{array}$$

Part XIII, Exercise B

(1)
$$\begin{array}{r} 8635 \\ -\ 427 \\ \hline 8208 \end{array}$$

(2)
$$\begin{array}{r} 6382 \\ -\ 177 \\ \hline 6205 \end{array}$$

(3)
$$\begin{array}{r} 2958 \\ -\ 579 \\ \hline 2379 \end{array}$$

(4)
$$\begin{array}{r} 7539 \\ -\ 356 \\ \hline 7183 \end{array}$$

(5)
$$\begin{array}{r} 9263 \\ -\ 658 \\ \hline 8605 \end{array}$$

(6)
$$\begin{array}{r} 3426 \\ -\ 869 \\ \hline 2557 \end{array}$$

(7)
$$\begin{array}{r} 5714 \\ -\ 985 \\ \hline 4729 \end{array}$$

(8)
$$\begin{array}{r} 4145 \\ -\ 298 \\ \hline 3847 \end{array}$$

(9)
$$\begin{array}{r} 1462 \\ -\ 767 \\ \hline 695 \end{array}$$

(10)
$$\begin{array}{r} 1537 \\ -\ 529 \\ \hline 1008 \end{array}$$

(11)
$$\begin{array}{r} 7365 \\ -\ 698 \\ \hline 6667 \end{array}$$

(12)
$$\begin{array}{rrrrr} & \underline{2}\text{ rivets} & \underline{3}\text{ long screws} & \underline{8}\text{ short screws} & \underline{6}\text{ nuts} \\ - & & 6\text{ long screws} & 4\text{ short screws} & 9\text{ nuts} \\ \hline & \underline{1}\text{ rivet} & \underline{7}\text{ long screws} & \underline{3}\text{ short screws} & \underline{7}\text{ nuts} \end{array}$$

(13)
$$\begin{array}{rrrrr} & \underline{5}\text{ rivets} & \underline{7}\text{ long screws} & \underline{4}\text{ short screws} & \underline{2}\text{ nuts} \\ - & & 6\text{ long screws} & 8\text{ short screws} & 5\text{ nuts} \\ \hline & \underline{5}\text{ rivets} & \underline{0}\text{ long screws} & \underline{5}\text{ short screws} & \underline{7}\text{ nuts} \end{array}$$

(14)
$$\begin{array}{rrrrr} & 8\text{ rivets} & 9\text{ long screws} & 6\text{ short screws} & 1\text{ nuts} \\ - & & 9\text{ long screws} & 9\text{ short screws} & 4\text{ nuts} \\ \hline & 7\text{ rivets} & 9\text{ long screws} & 6\text{ short screws} & 7\text{ nuts} \end{array}$$

(15)
$$\begin{array}{rrrrr} & 1\text{ rivet} & 4\text{ long screws} & 7\text{ short screws} & 2\text{ nuts} \\ - & & 3\text{ long screws} & 7\text{ short screws} & 5\text{ nuts} \\ \hline & 1\text{ rivet} & 0\text{ long screws} & 9\text{ short screws} & 7\text{ nuts} \end{array}$$

(16)
$$\begin{array}{rrrrr} & 3\text{ rivets} & 8\text{ long screws} & 5\text{ short screws} & 7\text{ nuts} \\ - & & 4\text{ long screws} & 8\text{ short screws} & 9\text{ nuts} \\ \hline & 3\text{ rivets} & 3\text{ long screws} & 6\text{ short screws} & 8\text{ nuts} \end{array}$$

(17)
$$\begin{array}{rrrrr} & 6\text{ rivets} & 5\text{ long screws} & 3\text{ short screws} & 8\text{ nuts} \\ - & & 7\text{ long screws} & 8\text{ short screws} & 9\text{ nuts} \\ \hline & 5\text{ rivets} & 7\text{ long screws} & 4\text{ short screws} & 9\text{ nuts} \end{array}$$

Part XIII, Exercise B (Continued)

(18) 9 rivets 8 long screws 3 short screws 1 nut
- 9 long screws 5 short screws 8 nuts
8 rivets 8 long screws 7 short screws 3 nuts

(19) 1 rivet 5 long screws 3 short screws 6 nuts
- 5 long screws 8 short screws 7 nuts
0 rivets 9 long screws 4 short screws 9 nuts

(20) 1 rivet 7 long screws 5 short screws 2 nuts
- 6 long screws 5 short screws 3 nuts
1 rivet 0 long screws 9 short screws 9 nuts

Part XIV, Exercise A

(1) 452 (2) 763 (3) 505 (4) $2224.00 (5) $475.00

(6) $675.00 (7) $1145.00 (8) $480.00 (9) $844.00

(10) List - $5274.00; Whlse - $4550.00; Dif - $724.00

Mkt. Price - $5525.00; Loan Price - $4100.00; Dif - $1425.00

Whlse - $4550.00; Loan - $4100.00; Dif - $450.00

Part XIV, Exercise B

(1) 3 (2) 4 (3) 1 (4) 6 (5) 2 (6) 11 (7) 12

(8) 14 (9) 21 (10) 33 (11) 86 (12) 72 (13) 102

(14) 124 (15) 306 (16) 312 (17) 103 (18) 15 (19) 102

(20) 404 (21) 2330 (22) 3305 (23) 1034 (24) 5023 (25) 22

Part XIV, Exercise C

(1) 29 (2) 17 (3) 47 (4) 67 (5) 89 (6) 28 (7) 26

(8) 9 (9) 9 (10) 18 (11) 268 (12) 380 (13) 57

(14) 189 (15) 76 (16) 2807 (17) 5096 (18) 618 (19) 1053

(20) 874

Part XV, Exercise A

(1) 10 (2) 5 (3) 12 (4) 17 (5) 13 (6) 3 (7) 3
(8) 20 (9) 17 (10) 20 (11) 10 (12) 6 (13) 14
(14) 11 (15) 5 (16) 21 (17) 23 (18) 98 (19) 66
(20) 60

Part XV, Exercise B

(1) 132 (2) 411 (3) 750 (4) 463 (5) 880 (6) 9033
(7) 4426 (8) 2027 (9) 1093 (10) 0 (11) 0 (12) 5101
(13) 4777 (14) 1839 (15) 1050 (16) 867 (17) 3398
(18) 2794 (19) 253 (20) 142

Part XV, Exercise C

(1) $12.00 (2) $12.00 (3) $18.00 (4) $18.00 (5) $19.00
(6) $37.00 (7) $49.00 (8) $69.00 (9) $99.00 (10) $69.00
(11) $92.00 (12) $50.00 (13) $71.00 (14) $13.00 (15) $36.00
(16) $341.00 (17) $475.00 (18) $198.00 (19) $1479.00
(20) $1482.00

Part XVI, Exercise A

(1) 1.8 (2) 6.9 (3) 9.9 (4) 6.9 (5) 9.9 (6) 9.0
(7) 8.1 (8) 11.2 (9) 14.6 (10) 17.3 (11) 43.0 (12) 73.3
(13) 89.1 (14) 93.6 (15) $82.00 (16) $81.40 (17) $88.00
(18) $86.70 (19) $89.50 (20) $80.50

Part XVI, Exercise B

(1) .5 (2) .2 (3) .26 (4) .23 (5) .31 (6) 2.33

(7) 5.04 (8) 2.24 (9) 1.58 (10) .86 (11) .021

(12) 1.987 (13) 2.075 (14) .005 (15) .017 (16) $29.20

(17) $67.20 (18) $5788.00; $1433.00 (19) $2597.00

(20) $2745.27; $1051.49

Part XVII, Exercise A

(1) $21,025.00 (2) $28,896.58 (3) $22,428.10 (4) $40,402.35

(5) $25,490.95 (6) $34,298.95 (7) $39,764.46 (8) $21,427.62

(9) $23,113.55 (10) $22,714.01

Part XVII, Exercise B

(1) $474.00 (2) $783.00 (3) $725.00 (4) $431.00 (5) $1507.00

(6) $2301.00 (7) $298.00 (8) $1899.00 (9) 1601.00 (10) $310.00

Part XVIII Exercise BB Test

(1) 1977 Thunderbird V8 H Top 2 D

Market Price	Loan Price
$5250.00 base price	$4900.00 base price
425.00 air/cond.	340.00 air/cond.

Give the total difference between the market and loan price. ($435.00)

(2) 1977 Plymouth 8 cyl. Fury 4 Dr Sedan, market price $3800., wholesale price $3155., $275. mkt price a/c; $226. loan price a/c; auto/trans. $145. mkt price; $115. loan price auto/trans; mkt. price pwr brkes $50.; loan price $41. pwr brkes. Give the

total difference between the market and loan price.

Mkt. price $4270 Loan price $3537 Dif $733

(3) 6 Cyl. Oldsmobile Starfire 1975, Cpe 2D; list price $4144; mkt price $2675; wholesale price $2005; loan price $1870. Find the difference between the list and market price ($1469); between the market price and wholesale price; ($670); the difference between the wholesale and loan price ($135). Add all of the differences and compare with the difference between the list and loan price. (The difference between the list and loan price is the same)

(4) 1974 Chevrolet 8 Cyl. Nova Custom Cpe., Mkt price $1950.; wholesale price $1460.; low mileage add $210. market price; wholesale price $160. Find the difference between the wholesale and market price.

$$\begin{array}{r} \$2160 \\ -\underline{1620} \\ \$\ 540 \end{array}$$

(5) 1977 New Dodge 8 Cyl. Royal Monaco dealer cost base price $3522; door locks dealer cost $77.; air/cond. dealer cost $410.; stereo w/tape dealer cost $253.; door locks market price $50.; air/cond. market price $275.; stereo w/tape market price $85. Find difference between the dealer cost of a new 1977 Dodge Royal Monaco and a used Dodge Royal Monaco that has a base market price of $3925.00

Part XVIII, Exercise BB Test (Continued)

Dealer Cost - $4262   Market Price - $4335   Dif - $73

Part XVIII, Exercise A

(1) 12; 12; 13; 11; 7; 10; 8; 16; 5; 31

(2) 15; 22; 18; 20; 33; 45; 16; 3; 5

(3) 304; 730; 912; 467; 717; 846

(4) 868; 724; 479; 975; 755

(5) 3103; 1099; 1899; 7352; 4371; 108; 2616

Part XIX Exercise AA Test

Answers are in parenthesis

(1) 2 + 5 + 4 - 3 = (8)   3 + 1 + 5 - 4 = (5)

7 + 5 + 8 - 6 = (14)   9 - 5 + 8 = (12)

8 - 6 + 7 - 3 = (6)

(2) 10 + 7 + 6 - 12 = (11)   13 + 9 + 15 - 6 = (31)

14 + 23 - 7 + 12 = (42)   31 + 15 - 24 = (22)

42 - 36 + 17 = (23)

(3) 234
+ 21
(255) - 32 = (223)

(4) 432
+ 125
(557) - 143 = (414)

(5) 697
- 245
(452) + 78 = (530)

(6) 3426
2386
+ 503
(6315) - 6102 = (213)

Part XIX, Exercise AA Test (Continued)

(7) 5328
1491
+ 3865
(10684) - 2487 = (8197)

(8) 7302
- 3861
(3441) + 2387 = (5828)

(9) 6001
- 2487
(3514) + 987 = (4501)

(10) 4328
+ 2974
(7302) + 53 - 5487 = (1868)

Part XIX, Exercise DD

Drill problems subtracting fractions with the same denominator. Stress the denominator remains the same only the numerator is subtracted. May call the numerator's "tops". Answers to problems are underlined.

(1) 3/4 - 1/4 = 2/4 (2) 5/8 - 2/8 = 3/8 (3) 5/7 - 3/7 = 2/7
(4) 2/3 - 1/3 = 1/3 (5) 5/6 - 4/6 = 1/6 (6) 4/5 - 2/5 = 2/5
(7) 7/10 - 3/10 = 4/10 (8) 8/9 - 4/9 = 4/9 (9) 6/7 - 2/7 = 4/7
(10) 8/11 - 3/11 = 5/11

Fill in blanks with missing parts of fractions, answers are underlined.

(11) 3/5 - 2/5 = 1/5 (12) 6/7 - 4/7 = 2/7 (13) 8/11 - 5/11 = 3/11
(14) 9/13 - 4/13 = 5/13 (15) 7/43 - 3/43 = 4/43 (16) 8/9 - 5/9 = 3/9
(17) 13/17 - 3/17 = 10/17 (18) 16/19 - 5/19 = 11/19
(19) 17/20 - 13/20 = 4/20 (20) 27/53 - 13/53 = 14/53

Part XIX, Exercise A

(1) $9451.00; $7683.00; $9451.00
- 7683.00
$1768.00

(2) $6252.00; $5650.00 $6252.00
- 5650.00
$ 602.00

Part XIX, Exercise A (Continued)

(3) $7226.00; $5804.70 $7226.00
- 5804.70
$1421.30

(4) $5908.00 list price w/equip.
- 4835.00 market price w/equip.
$1073.00

(5) $3854.00 list price with equip.
- 3555.00 market price with equip.
$ 299.00 difference dealer can allow a customer

(6) $3735.00 market price with equip.
- 2665.00 loan price
$1070.00 difference between sale price and price as loan collateral.

(7) $6354.00 list price of new 1978 Dodge Diplomat
- 5350.00 Market price of used 1977 Dodge Diplomat
$1004.00 difference between new and used models on year apart in age.

(8) $6432.00 list price
- 5330.00 market price
$1102.00 total difference that dealer may allow

(9) $6146.00 total list price
- 5185.00 total market price
$ 961.00 difference dealer could allow

(10) $1552.00 total list
- 1021.00 total dlr. cost
$ 531.00 total difference of optional equip.

Part XIX, Exercise B

(1) 1 (2) 4/4 = 1 (3) 2/3 (4) 3/3 = 1 (5) 3/4 (6) 3/4

(7) 3/3 = 1 (8) 3/5 (9) 5/5 = 1 (10) 9/10 (11) 9/9 = 1

(12) 1 1/9 (13) 6/7 (14) 94/100 (15) 283/1000 (16) 919/1000

(17) 2349/10,000 (18) 1 1/50 (19) 130/140 = 13/14

(20) 16/17

Part XIX, Exercise C

(1) 3/4 (2) 1 1/6 (3) 1 1/10 (4) 7/8 (5) 11/14
(6) 1 1/12 (7) 5/6 (8) 9/12 = 3/4 (9) 14/18 = 7/9
(10) 9/10

Part XX, Exercise AA Drill

Subtracting fractions with different denominators, the fractions must have the same denominators (bottoms). Thus the numerators (tops) must be multiplied by the same factor as the denominator. Answers are in ( )

Example: $3/4 - 1/2 = 3/4 - \frac{1 \text{ X } 2}{2 \text{ X } 2} = 3/4 - 2/4 = 1/4$

(1) 5/8 - 1/4 =(3/8) (2) 13/16 - 2/4 = (5/16)
(3) 7/10 - 2/5 = (3/10) (4) 7/9 - 1/3 = (4/9)
(5) 7/8 - 1/2 = (3/8) (6) 7/12 - 1/3 = (3/12)
(7) 11/16 - 1/2 = (3/16) (8) 9/10 - 2/5 = (5/10)
(9) 17/20 - 3/10 = (11/20) (10) 19/25 - 2/5 = (9/25)
(11) 13/24 - 1/3 = (5/24) (12) 17/21 - 3/7 = (8/21)
(13) 23/35 - 3/7 = (8/35) (14) 19/32 - 3/8 = (7/32)
(15) 35/40 - 17/20 = (1/40) (16) 15/50 - 7/25 = (1/50)
(17) 1/2 - 5/12 = (1/12) (18) 7/8 - 19/24 = (2/24)
(19) 3/11 - 7/33 = (2/33) (20) 9/10 - 79/100 = (11/100)

Part XX Exercise BB Drill

Add fractions having different denominators (bottoms) and subtract fractions within the same problem. Remind students that fractions must have the same denominator in order to add or subtract them. Whenever

Part XX, Exercise BB Drill (Continued)

a denominator is changed, its numerator (top) must be changed by the same factor. Example: 1/5 + 7/10 - 1/2 =

$$\frac{2 X 1}{2 X 5} + \frac{7}{10} - \frac{5 X 1}{5 X 2} = \frac{2}{10} + \frac{7}{10} - \frac{5}{10} = \frac{4}{10}$$

(1) 1/2
+ 3/4
- 2/4
(3/4)+ 3/4 - 2/4 =(4/4)or 1

(2) 1/3 + 5/6 - 3/6 = (4/6)   (3) 4/9 + 2/3 - 1/3 = (7/9)

(4) 7/8 + 1/4 - 1/2 = (5/8)   (5) 7/12 + 1/4 - 1/3 = (6/12)

(6) 7/10 + 2/5 - 1/2 = (6/10)   (7) 3/5 + 4/15 - 4/5 = (1/15)

(8) 1/4 + 9/16 - 1/8 = (11/16)   (9) 5/30 + 7/15 - 2/5 = (7/30)

(10) 9/24 + 3/12 - 1/2 = (3/24)   (11) 7/21 + 1/3 - 4/7 = (2/21)

(12) 13/33 + 8/11 - 2/3 = (15/33)   (13) 17/100 + 47/50 - 13/25 = (59/100)

(14) 19/36 + 5/9 - 4/6 = (15/36)   (15) 47/48 + 3/12 - 5/8 = (29/48)

(16) 751/1000 + 19/100 - 3/10 = (641/1000)

(17) 637/1000 + 83/250 - 19/200 = (874/1000)

(18) 83/1000 + 49/100 - 3/50 = (513/1000)

(19) 257/10,000 + 37/1000 - 3/100 = (327/10,000)

(20) 737/10,000 + 95/2000 - 3/200 = (1062/10,000)

Part XX, Exercise A

(1) 1/3   (2) 1/4   (3) 3/8   (4) 4/9   (5) 3/4   (6) 3/4

(7) 1/5   (8) 5/9   (9) 2/8   (10) 3/10

Part XX, Exercise B

(1) 1/4 (2) 3/6 = 1/2 (3) 1/8 (4) 5/10 = 1/2 (5) 5/10 = 1/2
(6) 1/4 (7) 3/12 = 1/4 (8) 2/6 = 1/3 (9) 14/18 = 7/9
(10) 3/8

Part XXI, Exercise A

(1) 7/10 (2) 4/4 = 1 (3) 11/13 (4) 6/9 = 2/3 (5) 2/2 = 1
(6) 4/7 (7) 10/14 = 5/7 (8) 25/23 = 1 2/23 (9) 6/11
(10) 18/27 (11) 2/4 = 1/2 (12) 1/3 (13) 2/5 (14) 11/33 = 1/3
(15) 37/100 (16) 180/1000 (17) 1838/10,000 (18) 2596/10,000
(19) 4/12 = 1/3 (20) 3/10

Part XXI, Exercise B

(1) 6/10 = 3/5 (2) 5/6 (3) 4/6 = 2/3 (4) 6/6 = 1
(5) 5/6 (6) 4/8 = 1/2 (7) 2/12 = 1/6 (8) 2/12 = 1/6
(9) 4/6 = 2/3 (10) 6/10 = 3/5 (11) 7/18 (12) 7/16
(13) 6/12 = 1/2 (14) 2/15 (15) 29/100

Part XXII, Exercise A

(1) 1.4 (2) 3.6 (3) 7.0 (4) 7.5 (5) 2.0 (6) 7.9
(7) 4.5 (8) 1.2 (9) 8.5 (10) 3.1 (11) 6.0 (12) 3.9
(13) .4 (14) 2.2 (15) 1.9 (16) 8.2 (17) 15.6 (18) 6.9
(19) 25.6 (20) 12.5 (21) 25.69 (22) $240.98 (23) $931.05
(24) $1795.67 (25) $2829.53 (26) $282.65 (27) .038
(28) .020 (29) .011 (30) 470.829

Part XXII, Exercise B

(1) 5/6 (2) 9/8 = 1 1/8 (3) 2/10 = 1/5 (4) 1/16

(5) 6/14 = 2/7 (6) 4/12 = 1/3 (7) 17/24 (8) 23/32

(9) 1/18 (10) 16/32 = 1/2 (11) 3/15 = 1/5 (12) 0

(13) 0 (14) 4/12 = 1/3 (15) 11/24 (16) 17/18 (17) 3/8

(18) 69/100 (19) 745/1000 (20) 213/1000

Part XXIII, Exercise CC

Multiplication tables to record on cassette tape. Explain to students that the second factor means how many times the first factor will be in the answer (product). Since any factor multiplied by zero means the factor is multiplied by "nothing at all" then the answer is nothing at all or zero. When the first factor is multiplied by one, then the answer will have to be the factor, for the first factor will appear in the answer only one time. Answers are not recorded, but appear in ( )

Problems to record and students to write:

(1) 1 X 0 = (0) 2 X 0 = (0) 3 X 0 = (0) 4 X 0 = (0) 5 X 0 = (0)
6 X 0 = (0) 7 X 0 = (0) 8 X 0 = (0) 9 X 0 = (0) 10 X 0 = (0)

(2) 1 X 1 = (1) 2 X 1 = (2) 3 X 1 = (3) 4 X 1 = (4) 5 X 1 = (5)
6 X 1 = (6) 7 X 1 = (7) 8 X 1 = (8) 9 X 1 = (9) 10 X 1 = (10)

(3) 1 X 2 = (2) 2 X 2 = (4) 3 X 2 = (6) 4 X 2 = (8) 5 X 2 = (10)
6 X 2 = (12) 7 X 2 = (14) 8 X 2 = (16) 9 X 2 = (18) 10 X 2 = (20)

Part XXIII, Exercise CC (Continued)

(4) 1 X 3 = (3) 2 X 3 = (6) 3 X 3 = (9) 4 X 3 = (12) 5 X 3 = (15)
6 X 3 = (18) 7 X 3 = (21) 8 X 3 = (24) 9 X 3 = (27) 10 X 3 = (30)

(5) 1 X 4 = (4) 2 X 4 = (8) 3 X 4 = (12) 4 X 4 = (16) 5 X 4 = (20)
6 X 4 = (24) 7 X 4 = (28) 8 X 4 = (32) 9 X 4 = (36) 10 X 4 = (40)

(6) 1 X 5 = (5) 2 X 5 = (10) 3 X 5 = (15) 4 X 5 = (20) 5 X 5 = (25)
6 X 5 = (30) 7 X 5 = (35) 8 X 5 = (40) 9 X 5 = (45) 10 X 5 = (50)

(7) 1 X 6 = (6) 2 X 6 = (12) 3 X 6 = (18) 4 X 6 = (24) 5 X 6 = (30)
6 X 6 = (36) 7 X 6 = (42) 8 X 6 = (48) 9 X 6 = (54) 10 X 6 = (60)

(8) 1 X 7 = (7) 2 X 7 = (14) 3 X 7 = (21) 4 X 7 = (28) 5 X 7 = (35)
6 X 7 = (42) 7 X 7 = (49) 8 X 7 = (56) 9 X 7 = (63) 10 X 7 = (70)

(9) 1 X 8 = (8) 2 X 8 = (16) 3 X 8 = (24) 4 X 8 = (32) 5 X 8 = (40)
6 X 8 = (48) 7 X 8 = (56) 8 X 8 = (64) 9 X 8 = (72) 10 X 8 = (80)

(10) 1 X 9 = (9) 2 X 9 = (18) 3 X 9 = (27) 4 X 9 = (36) 5 X 9 = (45)
6 X 9 = (54) 7 X 9 = (63) 8 X 9 = (72) 9 X 9 = (81) 10 X 9 = (90)

(11) 1 X 10 = (10) 2 X 10 = (20) 3 X 10 = (30) 4 X 10 = (40)
5 X 10 = (50) 6 X 10 = (60) 7 X 10 = (70) 8 X 10 = (80)
9 X 10 = (90) 10 X 10 = (100)

Part XXIII, Exercise DD

Tape the following problems on a cassette for students to write and solve. Use these problems for chalkboard drill. Answers are not to be recorded.

(1)	312	413	201	152	530	409
	X 2	X 3	X 5	X 4	X 0	X 1
	(624)	(1239)	(1005)	(608)	(000)	(409)
(2)	613	746	509	478	680	724
	X 2	X 4	X 3	X 5	X 1	X 0
	(1226)	(2984)	(1527)	(2390)	(680)	(0)
(3)	342	403	325	254	431	
	X 6	X 8	X 7	X 9	X 6	
	(2052)	(3224)	(2275)	(2286)	(2586)	
(4)	604	375	486	690	706	
	X 7	X 8	X 6	X 9	X 7	
	(4228)	(3000)	(2916)	(6210)	(4942)	
(5)	786	689	869	967	897	
	X 6	X 8	X 9	X 7	X 8	
	(4716)	(5512)	(7821)	(6769)	(7176)	

Part XXIII, Exercise A

(1) 10 (2) 20 (3) 22 (4) 24 (5) 33 (6) 30 (7) 36

(8) 80 (9) 84 (10) 42 (11) 46 (12) 69 (13) 92 (14) 100

(15) 110 (16) 105 (17) 60 (18) 50 (19) 115 (20) 120

(21) 186 (22) 216 (23) 282 (24) 441 (25) 469 (26) 592

(27) 664 (28) 736 (29) 882 (30) 623

Part XXIII, Exercise B

(1) 100 (2) 110 (3) 121 (4) 252 (5) 276 (6) 442

(7) 882 (8) 1312 (9) 1075 (10) 2385 (11) 1541 (12) 3268

(13) 4902 (14) 4836 (15) 3953 (16) 4656 (17) 6497

Part XXIII, Exercise B (Continued)

(18) 7980 (19) 4278 (20) 4418

Part XXIV, Exercise AA

Drill problems of three digits times two digits

(1)	132	315	250	403	514
	X 14	X 32	X 15	X 42	X 53
	(1848)	(10080)	(3750)	(16926)	(27242)
(2)	306	418	175	604	295
	X 24	X 31	X 15	X 43	X 23
	(7344)	(12958)	(2625)	(25972)	(6785)
(3)	638	378	809	693	187
	X 27	X 16	X 38	X 46	X 59
	(17226)	(6048)	(30742)	(31878)	(11033)
(4)	759	896	978	678	967
	X 68	X 79	X 94	X 86	X 87
	(51612)	(70784)	(91932)	(58308)	(84129)

Part XXIV Exercise BB

Chalkboard drill problems using the decimal point and the tenths place.

(1) 3 X .1 = (.3) 4 X .2 = (.8) 2 X .3 = (.6) 3 X .4 = (1.2)
5 X .2 = (1.0)

(2) 4 X .5 = (2.0) 5 X .3 = (1.5) 3 X .5 = (1.5) 4 X .3 = (1.2)
5 X .1 = (.5)

(3) 6 X .4 = (2.4) 8 X .3 = (2.4) 7 X .2 = (1.4) 9 X .5 = (4.5)
7 X .4 = (2.8)

(4) 8 X .6 = (4.8) 7 X .9 = (6.3) 3 X .9 = (2.7) 4 X .6 = (2.4)
7 X .7 = (4.9)

(5) 11 X .3 = (3.3) 13 X .5 = (6.5) 22 X .4 = (8.8) 34 X .2 = (6.8)
52 X .1 = (5.2)

(6) 42 X .5 = (21.0) 53 X .4 = (21.2) 25 X .3 = (7.5) 45 X .2 = (9.0)

Part XXIV, Exercise BB (Continued)

34 X .1 = (3.4)

(7) 63 X .7 = (44.1) 49 X .6 = (29.4) 28 X .9 = (25.2)

37 X .8 = (29.6) 74 X .0 = (0)

(8) 97 X .3 = (29.1) 88 X .9 = (79.2) 67 X .8 = (53.6)

78 X .7 = (54.6) 96 X .6 = (57.6)

Part XXIV, Exercise A

(1) 100 (2) 220 (3) 363 (4) 1248 (5) 639 (6) 936

(7) 486 (8) 1048 (9) 1225 (10) 762 (11) 1518 (12) 3084

(13) 2540 (14) 1935 (15) 1904 (16) 2022 (17) 1492

(18) 1674 (19) 1134 (20) 3690 (21) 2232 (22) 4758 (23) 7641

(24) 5742 (25) 4923 (26) 3976 (27) 6083 (28) 5243

(29) 4823 (30) 3829

Part XXIV, Exercise B

(1) 1110 (2) 1331 (3) 1344 (4) 7176 (5) 13,113 (6) 13,280

(7) 17,886 (8) 8,496 (9) 24,030 (10) 13,662 (11) 10,900

(12) 30,038 (13) 25,469 (14) 26,656 (15) 27,602 (16) 26,961

(17) 37,568 (18) 81,747 (19) 38,661 (20) 41,182

Part XXIV, Exercise C

(1) .2 (2) .2 (3) .6 (4) .4 (5) .8 (6) .4 (7) 1.2

(8) 1.6 (9) .9 (10) 1.0 (11) 2.0 (12) 1.5 (13) 3.0

(14) 1.8 (15) 2.4 (16) 3.2 (17) 4.8 (18) 2.4 (19) 2.7

(20) 4.5 (21) 5.4 (22) 3.6 (23) 1.8 (24) 2.8 (25) 2.1

Part XXIV, Exercise C (Continued)

(26) 4.0 (27) 2.4 (28) 2.7 (29) 4.5 (30) 5.6

Part XXIV, Exercise D

(1) $1.100 (2) $2.000 (3) $6.300 (4) $3.60 (5) $12.400

(6) $6.40 (7) $14.00 (8) $9.00 (9) $27.00 (10) $31.50

(11) $22.80 (12) $22.80 (13) $33.60 (14) $33.60 (15) $35.40

(16) $73.60 (17) $27.30 (18) $23.20 (19) $19.40 (20) $60.90

(21) $46.80 (22) $23.50 (23) $24.30 (24) $56.70 (25) 53.60

Part XXV, Exercise AA

Chalkboard drill problems of three digits by one digit in the tenth place.

(1)	312	403	135	423	543
	X .4	X .2	X .5	X .3	X .1
	(124.8)	(80.6)	(67.5)	(126.9)	(54.3)
(2)	146	217	439	382	596
	X .3	X .5	X .4	X .2	X .3
	43.8	108.5	175.6	76.4	178.8
(3)	546	382	495	278	567
	X .8	X .9	X .7	X .6	X .8
	436.8	343.8	346.5	166.8	453.6
(4)	968	589	786	698	879
	X .9	X .5	X .7	X .4	X .6
	871.2	294.5	550.2	279.2	527.4
(5)	786	879	967	698	897
	X .3	X .1	X .9	X .2	X .8
	235.8	87.9	870.3	139.6	717.6

Part XXV, Exercise A

(1) $9.80 (2) $4.40 (3) $6.20 (4) $9.60 (5) $12.90

(6) $5.00 (7) $10.40 (8) $14.00 (9) $27.00 (10) $15.90

Part XXV, Exercise A (Continued)

(11) $23.00 (12) $45.00 (13) $22.80 (14) $42.00 (15) $41.30

(16) $26.60 (17) $34.30 (18) $26.80 (19) $38.00 (20) $56.40

Part XXV, Exercise B

(1) 21.3 (2) 60.4 (3) 130.5 (4) 101.6 (5) 130.0 (6) 127.0

(7) 139.5 (8) 368.0 (9) 238.0 (10) 209.2 (11) 320.4

(12) 328.5 (13) 520.2 (14) 299.6 (15) 260.7 (16) 562.2

(17) 531.3 (18) 323.1 (19) 554.4 (20) 880.2 (21) 770.4

(22) 389.6 (23) 210.6 (24) 292.2 (25) 277.2

Part XXV, Exercise C

(1) 255.6 (2) 146.8 (3) 78.4 (4) 307.5 (5) 257.4 (6) 243.6

(7) 205.6 (8) 587.7 (9) 193.5 (10) 147.6 (11) 237.6

(12) 187.0 (13) 369.6 (14) 238.8 (15) 564.3 (16) 380.0

(17) 247.8 (18) 197.4 (19) 263.7 (20) 279.2

Part XXV, Exercise D

(1) 426.2 (2) 572.8 (3) 405.6 (4) 1521.0 (5) 3145.8

(6) 1261.5 (7) 974.4 (8) 2284.8 (9) 2184.8 (10) 3091.5

(11) 2614.2 (12) 2746.8 (13) 3669.6 (14) 2740.0 (15) 2221.2

(16) 8445.6 (17) 794.4 (18) 2638.2 (19) 7698.4 (20) 5916.6

Part XXVI, Exercise AA Test

Adjustable by giving limited to total amounts to teacher selected students.

Part XXVI, Exercise AA Test (Continued)

(1) 3 X 4 = (12) 5 X 2 = (10) 3 X 3 = (9) 4 X 5 = (20)
2 X 4 = (8) 3 X 5 = (15) 4 X 4 = (16) 2 X 3 = (6)
5 X 1 = (5) 0 X 5 = (0)

(2) 2 X .3 = (.6) 4 X .2 = (.8) 5 X .4 = (2.0) 3 X .1 = (.3)
3 X .5 = (1.5) 4 X .3 = (1.2) 5 X .2 = (1.0)

(3) 7 X .6 = (4.2) 8 X .4 = (3.2) 6 X .9 = (5.4) 9 X .5 = (4.5)
7 X .8 = (5.6)

(4) 23 X 2 = (46) 41 X .2 = (8.2) 35 X .3 = (10.5) 15 X 4 = (60)
53 X .4 = (21.2)

(5) 49 X .3 = (14.7) 56 X .2 = (11.2) 74 X .3 = (22.2)
82 X .5 = (41.0) 39 X .4 = (15.6)

(6) 93 X .6 = (55.8) 86 X .9 = (77.4) 67 X .8 = (53.6)
78 X .9 = (70.2) 89 X .7 = (62.3)

(7)
$$\begin{array}{r} 131 \\ \underline{\text{X } 2} \\ 262 \end{array} \qquad \begin{array}{r} 324 \\ \underline{\text{X } 5} \\ 1620 \end{array} \qquad \begin{array}{r} 514 \\ \underline{\text{X } 3} \\ 1542 \end{array} \qquad \begin{array}{r} 445 \\ \underline{\text{X } 4} \\ 1780 \end{array} \qquad \begin{array}{r} 503 \\ \underline{\text{X } 2} \\ 1006 \end{array}$$

(8)
$$\begin{array}{r} 452 \\ \underline{\text{X } .3} \\ 135.6 \end{array} \qquad \begin{array}{r} 506 \\ \underline{\text{X } .4} \\ 202.4 \end{array} \qquad \begin{array}{r} 178 \\ \underline{\text{X } .2} \\ 35.6 \end{array} \qquad \begin{array}{r} 394 \\ \underline{\text{X } .5} \\ 197.0 \end{array} \qquad \begin{array}{r} 954 \\ \underline{\text{X } .1} \\ 95.4 \end{array}$$

(9)
$$\begin{array}{r} 902 \\ \underline{\text{X } .6} \\ 541.2 \end{array} \qquad \begin{array}{r} 387 \\ \underline{\text{X } .9} \\ 348.3 \end{array} \qquad \begin{array}{r} 479 \\ \underline{\text{X } .8} \\ 383.2 \end{array} \qquad \begin{array}{r} 736 \\ \underline{\text{X } .7} \\ 515.2 \end{array} \qquad \begin{array}{r} 960 \\ \underline{\text{X } .9} \\ 864.0 \end{array}$$

Part XXVI, Exercise AA Test (Continued)

(10)	958	864	798	937	687
	X .3	X 5	X 7	X .8	X .6
	287.4	4320	5586	749.6	412.2

Part XXVI, Exercise A

(1) $210.40 (2) $382.40 (3) $107.10 (4) $190.40 (5) $369.00

(6) $184.20 (7) $94.50 (8) $216.80 (9) $170.70 (10) $115.80

Part XXVI, Exercise B

(1) $871.40 (2) $1508.40 (3) $2271.20 (4) $4210.00

(5) $741.00 (6) $1516.90 (7) $1438.40 (8) $2591.10

(9) $235.80 (10) $138.80

Part XXVII, Exercise AA Chalkboard Drill

Multiplying by whole numerals with a tenths place.

(1)	3	5	4	1	2
	X 2.3	3.4	5.1	5.4	2.3
	(6.9)	(17.0)	(20.4)	(5.4)	(4.6)
(2)	4	3	5	2	1
	X 21.3	25.3	32.4	54.1	34.2
	(85.2)	(75.9)	(162.0)	(108.2)	(34.2)
(3)	7	8	9	6	7
	X 31.2	124.1	215.4	43.5	531.4
	(218.4)	(992.8)	(1938.6)	(261.0)	(3719.8)
(4)	23	45	31	52	15
	4.1	3.2	2.5	4.3	4.5
	(94.3)	(144.0)	(77.5)	(223.6)	(67.5)
(5)	68	83	49	37	89
	X 3.2	4.5	2.4	5.3	4.1
	(217.6)	(373.5)	(117.6)	(196.1)	(364.9)

Part XXVII , Exercise AA Chalkboard Drill (Continued)

(6)	85	79	93	87	67
X	12.4	35.6	52. 4	73.5	29.3
	(1054.0)	(2812.4)	(4873.2)	(6394.5)	(1963.1)
(7)	98	56	38	79	47
	376.4	297.6	482.3	568.7	526.9
	36,887.2	16.665.6	18,327.4	44,927.3	24,764.3

Part XXVII , Exercise DD

(1)	5	3	4	2	1
X	2.4	3.2	1.5	5.4	4.3
	(12.0)	(9.6)	(6.0)	(10.8)	(4.3)
(2)	8	6	9	7	7
X	4.5	4.3	2.3	3.5	3.2
	(36.0)	(25.8)	(20.7)	(24.5)	(22.4)
(3)	452	304	521	235	503
X	1.2	3.5	4.1	3.2	4.3
	(542.4)	(1064.0)	(2136.1)	(752.0)	(2162.9)
(4)	614	507	376	816	692
X	2.3	4.1	2.5	5.2	3.4
	(1412.2)	(2078.7)	(940.0)	(4243.2)	(2352.8)
(5)	538	682	975	857	796
X	3.6	7.4	2.8	6.9	8.9
	(1936.8)	(5046.8)	(2730.0)	(5913.3)	(7084.4)

Part XXVII, Exercise A

(1) 3.6 (2) 6.8 (3) 11.5 (4) 18.0 (5) 5.1 (6) 25.2

(7) 15.6 (8) 46.9 (9) 69.6 (10) 80.1 (11) 18.9 (12) 25.6

(13) 30.1 (14) 32.4 (15) 43.4 (16) 38.0 (17) 31.2 (18) 29.4

(19) 8.1 (20) 63.2

Part XXVII, Exercise B

(1) 71.4 (2) 365.4 (3) 241.5 (4) 466.2 (5) 629.0 (6) 232.5

Part XXVII, Exercise B (Continued)

(7) 268.8 (8) 339.3 (9) 345.6 (10) 439.9

Part XXVII, Exercise C

(1) 9.2 (2) 22.8 (3) 13.5 (4) 121.5 (5) 805.2 (6) 1684.2

(7) 4722.3 (8) 5469.6 (9) 384.3 (10) 2750.4 (11) 3785.6

(12) 4094.4 (13) 9351.5 (14) 802.0 (15) 1507.2 (16) 1979.4

(17) 3291.6 (18) 4780.3 (19) 12,283.6 (20) 4569.0

Part XXVII, Exercise D

(1) 1380.3 (2) 1446.4 (3) 1239.3 (4) 10.764.0 (5) 26,122.5

(6) 81,150.0 (7) 226,501.0 (8) 337,744.2 (9) 672,388.2

(10) 284,060.1 (11) 579,899.0 (12) 143,170.6 (13) 88,427.4

(14) 174,451.2 (15) 410,767.5

Part XXVIII, Exercise AA Drill

Drill Multiplication problems with one factor of one numeral in the hundredths place.

(1)	3 .01 (.03)	5 .02 (.10)	4 .04 (.16)	2 .03 (.06)	1 .05 (.05)
	6 .03 (.18)	8 .02 (.16)	7 .04 (.28)	9 .05 (.45)	5 .06 (.30)
(2)	8 .07 (.56)	9 .06 (.54)	7 .09 (.63)	6 .08 (.48)	5 .09 (.45)
	9 .03 (.27)	8 .04 (.32)	7 .05 (.35)	6 .02 (.12)	5 .05 (.25)

Part XXVIII, Exercise AA Drill (Continued)

(3) X	32 .03 (.96)	21 .05 (1.05)	45 .02 (.90)	53 .04 (2.12)	34 .01 (.34)
X	38 .02 (.76)	82 .04 (3.28)	19 .05 (.95)	54 .03 (1.62)	47 .01 (.47)
(4) X	24 .08 (1.92)	35 .07 (2.45)	41 .09 (3.69)	52 .06 (3.12)	34 .09 (3.06)
X	28 .08 (2.24)	47 .06 (2.82)	65 .07 (4.55)	39 .08 (3.12)	84 .09 (7.56)
(5) X	79 .04 (3.16)	86 .09 (7.74)	67 .05 (3.35)	78 .07 (5.46)	96 .08 (7.68)
	68 .03 (2.04)	77 .07 (5.39)	89 .02 (1.78)	97 .08 (7.76)	76 .01 (.76)

Part XXVIII, Exercise BB Drill Problems, Multiplication with two or more digits by one digit in the hundredths place.

(1)	312 .03 (9.36)	45 .02 (.90)	254 .05 (12.70)	435 .04 (17.40)	53 .02 (1.06)
	503 .04 (20.12)	452 .05 (22.60)	305 .03 (9.15)	502 .01 (5.02)	254 .02 (5.08)
	52 .03 (1.56)	23 .04 (.92)	35 .03 (1.05)	42 .02 (.84)	435 .05 (21.75)
(2)	635 .04 (25.40)	473 .06 (28.38)	582 .03 (17.46)	703 .08 (56.24)	824 .07 (57.68)
	729 .05 (36.45)	674 .02 (13.48)	478 .09 (43.02)	936 .06 (56.16)	579 .08 (46.32)

Part XXVIII, Exercise BB (Continued)

	489	847	697	978	769
X	.07	.09	.08	.06	.04
	(34.23)	(76.23)	(55.76)	(58.68)	(30.76)

Part XXVIII, Exercise A

(1) .04 (2) .20 (3) .12 (4) .08 (5) .35 (6) .42

(7) .54 (8) .30 (9) .48 (10) .32 (11) .63 (12) .28

(13) .27 (14) .40 (15) .42 (16) .27 (17) .12 (18) .35

(19) .72 (20) .63

Part XXVIII, Exercise B

(1) .46 (2) .46 (3) .1.35 (4) 1.40 (5) 3.35 (6) 2.52

(7) 1.74 (8) 5.32 (9) 7.84 (10) 7.83 (11) $8.82

(12) $25.28 (13) $9.12 (14) $25.40 (15) $7.92

Part XXVIII, Exercise C

(1) .62 (2) .16 (3) .88 (4) 1.50 (5) 1.29 (6) 1.68

(7) 3.76 (8) 4.13 (9) 2.52 (10) 1.92 (11) 7.02 (12) 5.58

(13) 2.40 (14) 2.59 (15) 5.84 (16) 1.44 (17) 5.58 (18) 2.88

(19) 6.66 (20) 2.03

Part XXIX, Exercise AA Drill problems, multiplication of one digit by two digits in the hundredths place.

(1)	3	4	2	5	1
X	.23	.31	.35	.14	.54
	(.69)	(1.24)	(.70)	(.70)	(.54)

Part XXIX, Exercise AA (Continued)

4	3	2	5	0
.54	.45	.42	.31	.32
(2.16)	(1.35)	(.84)	(1.55)	(0)
(2) 8	7	6	9	8
X.43	.52	.24	.31	.45
(3.44)	(3.64)	(1.44)	(2.79)	(3.60)
4	7	3	8	9
X .63	.37	.82	.59	.74
(2.52)	(2.59)	(2.46)	(4.72)	(6.66)

Part XXIX, Exercise A

(1) .24 (2) .72 (3) 1.28 (4) 2.05 (5) 1.62 (6) 2.10
(7) 5.76 (8) 4.32 (9) 3.92 (10) 3.33 (11) 4.68 (12) 3.72
(13) 4.56 (14) 1.45 (15) 5.88 (16) 1.18 (17) 1.88 (18) 2.94
(19) 6.96 (2) 2.28

Part XXIX, Exercise B

(1) 1.32 (2) 4.03 (3) 10.08 (4) 6.45 (5) 28.08 (6) 55.61
(7) 39.10 (8) 12.18 (9) 58.88 (10) 41.34 (11) 31.96
(12) 15.13 (13) 59.85 (14) 47.58 (15) 26.04 (16) $107.10
(17) $244.02 (18) $239.46 (19) $427.88 (20) $427.88 (21) $39.45
(22) $67.54 (23) $130.87 (24) $38.88 (25) $67.32 (26) 707.52

Part XXX, Exercise AA Test

(1) 3	5	2	4	1
X .3	.4	.5	.2	.5
(.9)	(2.0)	(1.0)	(.8)	(.5)
0	6	7	8	9
.2	.2	.3	.2	.3
(0)	(1.2)	(2.1)	(1.6)	(2.7)

Part XXX, Exercise AA Test (Continued)

(2)	23	41	43	25	35
X	.01	.05	.02	.04	.03
	(.23)	(2.05)	(.86)	(1.00)	(1.05)
	54	51	15	34	24
X	.02	.05	.04	.04	.03
	(1.08)	(2.55)	(.60)	(1.36)	(.72)
(3)	63	42	28	37	92
X	.03	.08	.06	.04	.07
	(1.89)	(3.36)	(1.68)	(1.48)	(6.44)
	56	76	83	47	79
X	.02	.09	.04	.09	.06
	(1.12)	(6.84)	(3.32)	(4.23)	(4.74)
(4)	4	3	2	1	5
	.42	.34	.35	.11	.41
	(1.68)	(1.02)	(.70)	(.11)	(2.05)
	5	1	3	4	2
	.37	.82	.59	.27	.66
	(1.85)	(.82)	(1.77)	(1.08)	(1.32)
(5)	7	7	9	8	9
	.46	.83	.75	.69	.57
	(3.22)	(5.81)	(6.75)	(5.52)	(5.13)
	6	8	9	8	6
	.98	.78	.69	.86	.77
	(5.88)	(6.24)	(6.21)	(6.88)	(4.62)

Part XXX, Exercise CC Test

(1)	3	2	4	5	1
	.04	.01	.05	.02	.01
	(.12)	(.02)	(.20)	(.10)	(.01)
	6	8	9	7	5
	.03	.02	.05	.04	.05
	(.18)	(.16)	(.45)	(.28)	(.25)
(2)	6	2	5	7	8
	.08	.09	.07	.09	.08
	(.48)	(.18)	(.35)	(.63)	(.64)

Part XXX, Exercise CC Test (Continued)

3 X .06 (.18)	6 .07 (.42)	8 .09 (.72)	9 .08 (.72)	7 .08 (.56)
(3) 25 .13 (3.25)	14 .22 (3.08)	32 .42 (13.44)	23 .31 (7.13)	44 .15 (6.60)
62 .24 (14.88)	57 .31 (17.67)	83 .43 (35.69)	49 .52 (25.48)	64 .54 (34.56)
79 .34 (26.86)	87 .87 (75.69)	59 .19 (11.21)	89 .76 (67.64)	98 .61 (59.78)

Part XXX, Exercise A

(1) .63 (2) 1.15 (3) 1.24 (4) 2.94 (5) 4.59 (6) 24.96

(7) 43.20 (8) 34.77 (9) 10.26 (10) 36.66 (11) $262.28

(12) $239.46 (13) $455.25 (14) $961.73 (15) $911.82

(16) $649.08 (17) $857.22 (18) $771.42 (19) $1030.80

(20) $1495.62

Part XXX Exercise B

(1) 3.69 (2) 20.65 (3) 21.68 (4) 16.20 (5) 9.04 (6) 356.44

(7) 340.08 (8) 186.99 (9) 624.36 (10) 832.20 (11) 886.95

(12) 2531.14 (13) 2963.07 (14) 2627.13 (15) 8046.71

(16) 10,926.08 (17) 15,329.40 (18) 20,341.12 (19) 69,871.70

(20) 51,680.52

Part XXXI, Exercise AA

Chalkboard exercise problems of one or more digits multiplied by three

Part XXXI, Exercise AA (Continued)

digits with two of the three digits in the hundredths place.

(1) 4 1.23 (4.92)	2 2.13 (4.26)	3 3.21 (9.63)	1 5.25 (5.25)	5 4.31 (21.55)
3 5.45 (16.35)	5 3.24 (16.20)	4 4.53 (18.12)	2 4.51 (9.02)	1 1.21 (1.21)
(2) 9 2.15 (19.35)	7 3.42 (23.94)	6 5.23 (31.38)	8 4.53 (36.24)	8 2.14 (17.12)
6 4.15 (24.90)	9 5.34 (48.06)	7 3.21 (22.47)	6 3.53 (21.18)	7 5.34 (37.38)
(3) 42 3.12 (131.04)	35 1.24 (43.40)	15 5.43 (81.45)	52 1.33 (69.16)	34 4.52 (153.68)
13 5.24 (68.12)	23 3.52 (80.96)	54 4.53 (244.62)	25 3.42 (85.50)	31 1.34 (41.54)
(4) 73 4.52 (329.96)	38 2.13 (80.94)	62 5.23 (324.26)	29 1.25 (36.25)	74 3.45 (255.30)
64 5.14 (328.96)	48 4.52 (216.96)	19 5.14 (97.66)	27 2.35 (63.45)	38 1.54 (58.52)
(5) 39 6.57 (256.23)	402 4.18 (1680.36)	68 3.59 (244.12)	173 2.49 (430.77)	240 7.63 (1831.20)
94 6.78 (637.32)	328 9.03 (2961.84)	516 5.84 (3013.44)	74 6.48 (479.52)	85 4.95 (420.75)

Part XXXI, Exercise BB

Chalkboard drill of problems with one or more digits multiplied by three digits with zero as a place holder with a decimal setting off the

Part XXXI, Exercise BB (Continued)

hundredths place.

(1) 3 X 41.20 (123.60)	2 35.10 (70.20)	4 24.03 (96.12)	5 41.03 (205.15)	1 55.03 (55.03)
3 X 20.41 (61.23)	5 30.25 (151.25)	1 40.02 (40.02)	4 50.14 (200.56)	2 20.04 (40.08)
(2) 8 X 34.60 (276.80)	7 46.05 (322.35)	9 70.53 (634.77)	6 91.02 (546.12)	7 80.96 (566.72)
6 X 58.70 (352.20)	8 90.57 (724.56)	9 26.08 (234.72)	7 37.02 (259.14)	8 80.12 (640.96)
(3) 45 X 35.02 (1575.90)	31 42.03 (1302.93)	52 32.50 (1690.00)	14 50.24 (703.36)	23 40.52 (931.96)
24 X 23.05 (553.20)	43 15.40 (662.20)	15 31.04 (465.60)	35 42.05 (1471.75)	13 50.23 (652.99)
(4) 26 X 41.08 (1068.08)	75 20.36 (1527.00)	81 17.06 (1381.86)	19 50.18 (953.42)	84 50.82 (4268.88)
64 X 18.06 (1155.84)	47 39.70 (1865.90)	89 29.08 (2588.12)	76 40.17 (3052.92)	67 50.68 (3395.56)
(5) 324 X 50.13 (16,242.12)	415 24.03 (9972.45)	154 15.20 (2340.80)	345 52.04 (17,953.80)	235 31.02 (7289.70)
265 X 10.83 (2869.95)	731 26.01 (19,013.31)	194 37.02 (7181.88)	485 50.64 (24,560.40)	169 73.08 (12,350.52)

Part XXXI, Exercise CC

Chalkboard drill problems, multiplying one or more digits by three digits and zero as a place holder; with two digits and zero using a decimal point

Part XXXI, Exercise CC

hundredths and thousandths.

(1)	25	314	54	531	43
X	30.14	5.02	35.04	24.30	15.02
	3	42	413	2	315
X	.012	10.53	.052	54.50	.043

ANSWERS TO ABOVE

753.50; 1,576.28; 1,892.16; 12,903.30; 645.86; .036; 442.26;

21.476; 109.00; 13.545

(2)	6	18	27	95	76
X	.072	20.36	.038	5.03	8.02
	385	746	597	918	679
X	.038	.084	60.18	.067	80.34

ANSWERS TO ABOVE

.432; 366.48; 1,026; 477.85; 609.52; 14.630; 62.664; 35,927.46;

61.506; 54,550.86

(3)	6931	2876	1967	3589	6179
X	.087	.309	.408	.072	.170
	8734	6195	4786	5197	9867
X	.506	.072	.309	.108	.012

ANSWERS TO ABOVE

602.997; 888.684; 802.536; 258.408; 1050.430; 4419.404; 446.040

1478.874; 561.276; 118.404

Part XXXI, Exercise A

(1) 4.26 (2) 13.68 (3) 21.55 (4) 7.56 (5) 5.44 (6) 198.72

(7) 376.68 (8) 219.48 (9) 552.72 (10) 606.51 (11) 1585.30

Part XXXI, Exercise A (Continued)

(12) 5887.35 (13) 7,039.76 (14) 4,073.91 (15) 7,010.64

(16) 17,980.40 (17) 23,012.10 (18) 82,460.70 (19) 22,239.72

(20) 41,990.76

Part XXXI, Exercise B

(1) 75.42 (2) 70.48 (3) 215.60 (4) 308.58 (5) 57.00

(6) 508.32 (7) 196.47 (8) 347.76 (9) 197.58 (10) 206.37

(11) 466.56 (12) 384.90 (13) 506.22 (14) 650.02 (15) 628.02

(16) 146.70 (17) 334.28 (18) 190.96 (19) 269.91 (20) 431.34

Part XXXI, Exercise C

(1) 124.08 (2) 126.99 (3) 70.15 (4) 40.70 (5) 287.63

(6) 288.54 (7) 289.92 (8) 628.83 (9) 608.16 (10) 375.34

(11) 207.39 (12) 327.95 (13) 109.74 (14) 237.92 (15) 417.35

(16) 313.96 (17) 478.45 (18) 214.32 (19) 394.74 (20) 59.50

Part XXXI, Exercise D

(1) 4.26 (2) 12.36 (3) 15.70 (4) 12.08 (5) 15.12 (6) 32.48

(7) 63.27 (8) 32.82 (9) 56.63 (10) 59.68 (11) 81.90

(12) 607.54 (13) 275.53 (14) 278.86 (15) 590.73 (16) 1306.50

(17) 5967.42 (18) 2203.94 (19) 2311.32 (20) 7260.12

Part XXXII, Exercise AA

Chalkboard drill problems multiplying one or more digits by three digits in the thousandths place, and by two digits and zero as a place holder

Part XXXII, Exercise AA (Continued)

in thousandths place.

(1)	5	23	43	341	532
X	.234	.451	.255	.512	.415
	51	13	3	153	241
X	.104	.425	.545	.204	.053

ANSWERS TO ABOVE

1.170; 10.373; 10.965; 174.592; 220.780; 5.304; 5.525; 1.635;
31.212; 12.773

(2)	8	76	925	582	84
X	.132	.423	.403	.304	.450
	39	349	548	728	697
X	.501	.352	.305	.053	.304

ANSWERS TO ABOVE

1.056; 32.148; 372.775; 176.928; 37.800; 19.539; 122.848; 167.140;
38.584; 211.888;

(3)	8	86	769	986	678
X	.679	.708	.867	.098	.789
	895	476	398	719	956
X	.476	.584	.470	.108	.802

ANSWERS TO ABOVE

5.432; 60.888; 666.723; 96.628; 534.942; 426.020; 277.984;
187.060; 77.652; 766.712

Part XXXII, Exercise BB

Chalkboard drill problems; multiply one or more digits by three digits and zero as a place holder in one of the thousandths places.

(1)	3	5	4	2	0
X	2.014	1.402	3.520	5.043	4.305

Part XXXII, Exercise BB (Continued)

	45	54	32	24	33
X	1.032	1.023	5.401	3.530	4.053

ANSWERS TO ABOVE

6.042; 7.010; 14.080; 10.086; 0; 46.440; 55.242; 172.832; 84.720

133.749

(2)	415	543	324	521	124
X	3.023	1.402	4.130	4.031	5.430
	354	453	254	2431	3254
X	5.403	3.045	5.302	1.022	3.504

ANSWERS TO ABOVE

1254.545; 761.286; 1338.120; 2100.151; 673.320; 1912.662; 1379.385

1346.708; 2484.482; 11402.016

(3)	72	38	649	438	197
X	4.063	1.604	3.078	5.608	7.016
	736	926	687	819	973
X	6.409	2.089	1.076	7.806	8.067

ANSWERS TO ABOVE

292.536; 60.952; 1997.622; 2456.304; 1382.152; 4717.024

1934.414; 739.212; 6393.114; 7849.191

Part XXXII, Exercise A

(1) 1.116 (2) .742 (3) 1.368 (4) 1.755 (5) 2.096

(6) 3.460 (7) 5.236 (8) 5.556 (9) 4.401 (10) 6.368

Part XXXII, Exercise B

(1) .693 (2) 2.160 (3) 2.128 (4) 1.028 (5) .729 (6) 17.476

(7) 10.575 (8) 27.825 (9) 10.668 (10) 11.799 (11) 444.822

Part XXXII, Exercise B (Continued)

(12) 301.453 (13) 638.715 (14) 477.191 (15) 353.439

(16) 65.450 (17) 364.770 (18) 319.288 (19) 570.204

(20) 794.182

Part XXXII, Exercise C

(1) .075 (2) .615 (3) .806 (4) 2.004 (5) 2.010 (6) 1.976

(7) 25.728 (8) 23.517 (9) 38.592 (10) 34.983 (11) 50.344

(12) 216.678 (13) 443.717 (14) 61.685 (15) 30.192 (16) 337.695

(17) 595.544 (18) 2309.044 (19) 348.634 (20) 7538.994

Part XXXII, Exercise D

(1) 6.123 (2) 10.608 (3) 16.812 (4) 15.215 (5) 3.008 (6) 18.510

(7) 68.840 (8) 34.342 (9) 87.354 (10) 48.474 (11) 128.562

(12) 223.808 (13) 438.654 (14) 340.608 (15) 789.351 (16) 467.912

(17) 409.654 (18) 350.765 (19) 295.372 (20) 335.405

Part XXXIII, Exercise AA Test

(1) 2	21	15	43	35
X .03	.02	.04	.05	.01
44	34	12	25	213
X .04	.03	.05	.04	.03

ANSWERS TO ABOVE

.06; .42; .60; 2.15; .35; 1.76; 1.02; .60; 1.00; 6.39

(2) 16	38	72	49	75
X .02	.04	.03	.05	.01
96	78	67	79	84
X .04	.03	.05	.02	.03

Part XXXIII, Exercise AA Test (Continued)

ANSWERS TO PROBLEMS ON PREVIOUS PAGE

.32; 1.52; 2.16; 2.45; .75; 3.84; 2.34; 3.35; 1.58; 2.52

Part XXXIII, Exercise BB Test

(1)	235	412	315	521	215
X	.016	.028	.037	.082	.903
	423	314	352	145	544
X	.058	.602	.704	.089	.054

ANSWERS TO ABOVE

3.760; 11.536; 11.655; 42.722; 194.145; 24.534; 189.028; 247.808; 12.905; 29.376

(2)	768	896	698	966	785
X	.067	1.806	.908	2.079	3.708
	412	572	386	619	728
X	7.806	9.017	2.908	8.609	6.907

ANSWERS TO ABOVE

51.456; 1618.176; 633.784; 2008.314; 2910.780; 3216.072; 5157.724; 1122.488; 5328.971; 5028.296

Part XXXIII, Exercise CC Test

(1)	3	2	25	31	54
X	.46	.18	.03	.07	.013
	44	42	35	13	24
X	.235	.015	.02	3.542	.025

ANSWERS TO ABOVE:

1.38; .36;. 75;, 2.17; .702; 10.340; .630; .70; 46.046; .600

(2)	6	8	9	7	8
X	.072	.07	.019	2.306	3.028

Part XXXIII, Exercise CC Test (Continued)

29	48	73	56	65
X .08	.026	2.109	3.028	2.019

ANSWERS TO PROBLEMS

.432; .56; .171; 16.142; 24.224; 2.32; 1.248; 153.957; 169.568; 131.235

(3) 578	649	834	275	697
X .032	1.302	.09	3.208	.047
936	486	978	156	378
X .406	4.507	1.025	9.708	.039

ANSWERS TO ABOVE

18.496; 844.998; 75.06; 882.200; 32.759; 380.016; 2190.402; 1002.450; 1514.448; 14.742

Part XXXIII, Exercise DD

Drill problems with zero in both factors and the second factor in the thousandths place.

(1) 201	340	503	401	250
X .305	.204	.045	.052	.403
150	405	302	501	204
X .024	.503	.402	.304	.032

ANSWERS TO PROBLEMS:

61.305: 69.360; 22.635; 20.852; 100.750; 3.600; 203.715: 121.404; 152.304; 6.528

(2) 906	805	706	607	790
X .037	.078	.089	.907	.807
890	708	690	608	906
X .607	.086	.078	.709	.804

Part XXXIII, Exercise DD (Continued)

ANSWERS TO PROBLEMS FROM PREVIOUS PAGE

33.522; 62.790; 62.834; 550.549; 637.530; 540.230; 60.888; 53.820; 431.072; 728.424

Part XXXIII, Exercise EE

Drill problems multiplying by four digits in the ten thousandths place.

(1)	4	2	3	5	1
	X.1423	.2135	.5132	.4325	.5453
	31	12	43	35	24
	X.2134	.5214	.4251	.1524	.3514

ANSWERS TO PROBLEMS:

.5692; .4270; 1.5396; 2.1625; .5453; 6.6154; 6.2568; 18.2793; 5.3340; 8.4336

(2)	64	28	73	19	49
	X.5234	.3724	.1543	.2364	.3823
	413	524	341	154	235
	X.3261	.4753	.7124	.5823	.2491

ANSWERS TO PROBLEMS:

33.4976; 10.4272; 11.2639; 4.4916; 18.7327; 134.6793; 249.0572; 242.9284; 89.6742; 58.5385

Part XXXIII, Exercise FF

Drill problems multiplying two or more digits by three digits and zero in the ten thousandths place.

(1)	14	32	51	43	25
	X.3025	.1403	.2403	.0512	.5403
	86	76	79	98	68
	X.0841	.7084	.6208	.0278	.9027

Part XXXIII, Exercise FF (Continued)

ANSWERS TO PROBLEMS ON PREVIOUS PAGE

4.2350; 4.4896; 12.2553; 2.2016; 13.5075; 7.2326; 53.8384; 49.0432; 2.7244; 61.3836

(2)	432	265	537	194	713
X	.4803	.0291	.2058	.0832	.5108
	284	631	372	249	428
X	.3509	.1047	.4905	.0583	.5093

ANSWERS TO PROBLEMS:

207.4896; 7.7115; 110.5146; 16.1408; 364.2004; 99.6556; 66.0657; 182.4660; 14.5167; 217.9804

(3)	6879	88	597	9387	7869
X	.0867	.9806	.0618	.7069	.6807
	19	79	867	93	6987
X	.0689	.6079	.0798	.0869	.8609

ANSWERS TO PROBLEMS:

596.4093; 86.2928; 36.8946; 6635.6703; 5356.4283; 1.3091; 48.0241; 69.1866; 8.0817; 6015.1083

Part XXXIII, Exercise A

(1) 139.320 (2) 2169.720 (3) 1019.872 (4) 2613.402 (5) 2531.592

(6) 2471.300 (7) 5071.920 (8) 4981.458 (9) 2891.707

(10) 5008.980 (11) 8412.900 (12) 1855.414 (13) 440.748

(14) 2409.400 (15) 4171.200 (16) 6057.324 (17) 2895.600

(18) 640.872 (19) 303.156 (20) 1068.527

Part XXXIII, Exercise B

(1) .2513 (2) 1.2705 (3) 1.2616 (4) .8642 (5) .7670

Part XXXIII, Exercise B (Continued)

(6) 1.3070 (7) 2.1092 (8) 2.0562 (9) 1.4784 (10) 4.4835

(11) 2.1708 (12) 5.9752 (13) 2.6532 (14) 5.5734 (15) 2.6943

(16) 3.3990 (17) 2.6928 (18) 1.4538 (19) 3.8712 (20) 3.0002

Part XXXIII, Exercise C

(1) 1.4742 (2) 12.4651 (3) 15.7680 (4) 3.8100 (5) 18.6172

(6) 6.5610 (7) .5149 (8) 67.7292 (9) 46.2852 (10) 51.4026

(11) 7.6612 (12) 21.7455 (13) 480.9220 (14) 13.7241

(15) 264.2058 (16) 142.4163 (17) 5163.2060 (18) 2190.2508

(19) 2978.3138 (20) 189.3708

Part XXXIV, Exercise AA Drill Multiplication problems

(1)	341	524	243	452	154
X	.5102	.2431	.3502	.4235	.0243
	658	739	961	847	579
X	.4213	.0124	.5204	.0315	.3045

ANSWERS TO ABOVE:

173.9782; 127.3844; 85.0986;; 191.4220; 3.7422; 277.2154; 9.1636; 500.1044; 26.6805; 176.3055

(2)	435	512	345	152	234
X	.6879	.0798	.6708	.8069	.0978
	634	572	189	976	849
X	.0726	.4609	.5086	.2407	.6137

ANSWERS TO ABOVE:

299.2365; 40.1576; 231.4260; 122.6488; 22.8852; 46.0284; 263.6348; 96.1254; 234.9232; 521.0313

Part XXXIV, Exercise BB

Drill problems with both factors having decimals. The answer must indicate the places to the right of the decimal that total from both factors.

(1) 3.4 1.2 3.2 2.5 4.1 5.3
X .2 .3 .3 .1 .4 .5

2.3 4.2 5.4 3.4
X .2 .5 .4 .3

ANSWERS TO ABOVE:

.68; .36; .96; .25; 1.64; 2.65; .46; 2.10; 2.16; 1.02

(2) 4.7 8.3 6.4 2.9 7.5 4.9
X .3 .5 .4 .2 .1 .5

7.3 9.5 8.4 5.6
X .4 .3 .4 .2

ANSWERS TO ABOVE:

1.41; 4.15; 2.56; .58; .75; 2.45; 2.92; 2.85; 3.36; 1.12

(3) 7.8 9.2 6.7 8.5 9.7 6.9
X .6 .8 .9 .7 .6 .8

8.9 7.4 9.6 7.8
X .7 .9 .9 .8

ANSWERS TO ABOVE:

4.68; 7.36; 6.03; 5.95; 5.82; 5.52; 6.23; 6.66; 8.64; 6.24

Part XXXIV, Exercise CC

Drill multiplication problems. Explain the need for inserting zero in the answer when there are not enough digits in the answer.

(1) 52.4 3.14 .253 4.53 14.3
X .3 .4 .2 .5 .4

Part XXXIV, Exercise CC (Continued)

	1.62	24.9	.874	9.38	21.8
X	.5	.3	.2	.4	.1

ANSWERS:

15.72; 1.256; .0506; 2.265; 5.72; .810; 7.47; .1748; 3.752; 2.18

(2)	3.42	4.32	51.4	2.53	14.5
X	7.4	3.8	6.5	5.7	9.3
	4.96	8.67	6.98	87.4	3.96
X	8.4	3.9	4.7	9.6	7.6

ANSWERS:

25.308; 16.416; 334.10; 14.421; 134.85; 41.664; 33.813; 328.06;

839.04; 30.096

Part XXXIV, Exercise A

(1) 147.7710 (2) 51.1456 (3) 149.9190 (4) 27.3408 (5) 131.5412

(6) 70.2564 (7) 10.3005 (8) 202.4428 (9) 98.6904 (10) 364.4968

(11) 500.1098 (12) 28,842.5487 (13) 30,013.3035 (14) 31,135.0832

(15) 7357.2605 (16) 53,267.8388 (17) 16,923.0822 (18) 52,461.3248

(19) 8584.4325 (20) 19,025.5272

Part XXXIV, Exercise B

(1) .63 (2) .68 (3) .60 (4) 1.59 (5) .45 (6) .68

(7) 2.08 (8) 2.10 (9) 1.32 (10) .35 (11) 1.28 (12) 1.48

(13) .84 (14) 2.35 (15) 4.30 (16) 4.48 (17) 6.08 (18) 7.83

(19) 5.82 (20) 6.23

Part XXXIV, Exercise C

(1) 6.42 (2) 1.356 (3) .725 (4) 1.404 (5) 21.15 (6) 1.430

(7) 3.435 (8) 3.752 (9) 23.04 (10) 2.961 (11) 4.410

(12) 9.683 (13) 14.826 (14) 13.992 (15) 236.28 (16) 56.448

(17) 28.362 (18) 53.01 (19) 145.36 (20) 14.685 (21) .3744

(22) .2583 (23) 1.599 (24) 4.224 (25) 4.056 (26) 2.9445

(27) 7.2808 (28) 44.764 (29) 7.7322 (30) 6.3168

Part XXXV, Exercise AA

Multiplying with the decimal points in various positions

(1)	1.3	3.4	.45	5.2	1.2
X	.1	.02	.5	.04	.05
	.51	.28	1.64	6.25	3.41
	2.4	5.3	.35	4.5	.36

ANSWERS:

.13; .068; .225; .208; .060; 1.224; 1.484; .5740; 28.125; 1.2276

(2)	32.1	.628	8.34	29.7	93.7
X	.524	.467	57.2	3.81	14.8
	.287	59.6	72.8	3.87	96.7
X	.396	36.8	4.69	.459	.967

ANSWERS:

16.8204; .293276; 477.048; 113.157; 1386.76; .113652; 2193.28;

341.432; 1.77633; 93.5089

(3)	231.4	45.12	5.321	.2413	.3545
X	315.2	243.5	435.2	34.25	5.324
	.2647	2.3571	34.619	713.29	48.395
X	.4351	.8364	5.381	56.34	721.9

ANSWERS:

72,937.28; 10,986.720; 2315.6992; 8.264525; .1873580; .11517097;

Part XXXV, Exercise AA (Continued)

ANSWERS:

1.97147844; 186.284839; 40186.7586; 34936.3505

(4) 23
+ 14
(37) X 5 = (185)

45
+3
(48) X 3 = (144)

31
+25
(56) X 4 = (224)

351
+234
(585) X 3 = (1755)

2431
+ 1524
(3955) X 24 = (94,920)

(5) 76
+896
(972) X 86 = (83,592)

879
+ 56
(935) X 9 = (8415)

586
+ 349
(935) X 28 = (26,180)

728
+196
(924) X 76 = (70,224)

917
+ 486
(1403) X 351 = (492,453)

687
+ 769
(1456) X 869 = (1,265,264)

Part XXXV, Exercise BB Test

(1) 3 5 3 12 15
X .2 .3 .4 .2 .1

4 21 14 32 53
X .0 .3 .2 .4 .5

ANSWERS:

.6; 1.5; 1.2; 2.4; 1.5; 0; 6.3; 2.8; 12.8; 26.5

(2) 4 5 2 17 28
X .7 .9 .8 .6 .5

19 26 37 48 65
X .6 .7 .8 .9 .8

ANSWERS:

2.8; 4.5; 1.6; 10.2; 14.0; 11.4; 18.2; 29.6; 43.2; 52.0

Part XXXV, Exercise BB Test (Continued)

(3)	321	415	243	521	354
X	.26	.17	.38	.09	.72
	135	252	603	102	417
X	3.6	2.8	4.7	.064	.308

ANSWERS:

83.46; 70.55; 92.34; 46.89; 254.88; 486.0; 705.6; 2834.1; 6.538; 128.436

(4)	40.23	6.018	2.17	1.058	61.09
X	.051	2.709	.098	.706	.0069
	738.1	2.609	1.078	52.90	.0078
X	.009	8.007	.609	4.008	2.069

ANSWERS:

2.05173; 16.302762; .21266; .746948; .421521; 6.6429; 20.890263; .656502; 212.02320; .0161382

Part XXXV, Exercise CC Test

Answers in parenthesis

(1)	2	5	4
	+4	+ 3	+ 3
	(6) X 3 = (18)	(8) X 4 = (32)	(7) X 5 = (35)
	35	24	43
	+ 4	+ 5	+ 3
	(39) X 2 = (78)	(29) X 4 = (116)	(46) X 3 = (138)
(2)	78	96	58
	+ 27	+ 82	+ 297
	(105) X 6 = (630)	(178) X 5 = (890)	(355) X 7 = (2485)

802	768	38.14	9.081
+ 695	+ 829	+ 51.75	+ 6.016
(1497)	(1597)	(89.89)	(15.097)
X 2.5	.06	X.079	X 2.008
(3742.5	(95.82)	(7.10131)	(30.314776)

Part XXXV, Exercise CC Test (Continued)

38
X 65
(2470)
+ 3648
(6118)

402
X 7.5
(3015.0)
+ 8206.7
(11221.7)

15.06
X 3.09
(46.5354
+ 9.08
(55.6154)

Part XXXV, Exercise A

(1) 1.2670 (2) .132 (3) 105.325 (4) 10785936.60

(5) 71.4646455 (6) .5886 (7) .0682 (8) 16765.68

(9) 22403.28 (10) 339.1095 (11) 122.299485 (12) 21.58732728

(13) 28684.39104 (14) 32.653641 (15) 1.206127176

Part XXXVI, Exercise AA

(1) 2 X 3 = (6)
- 4
(2)

4 X 4 = (16)
- 8
(8)

5 X 3 = (15)
- 3
(12)

3 X 4 = (12)
- 5
(7)

16 X 4 = (64)
- 3
(61)

21 X 3 = (63)
- 5
(58)

43 X 2 = (86)
- 4
(82)

27 X 5 = (135)
- 24
(111)

(2) 58
X 14
(812)
- 224
(588)

63
X 32
(2016)
-453
(1563)

49
X 25
(1225)
- 503
(722)

87
X 16
(1392)
-769
(623)

96
X 83
(7968)
-3089
(4879)

358
X13
(4654)
-1778
(2876)

598
X34
(20332)
-5403
(14929)

7103
X 52
(369356)
-43858
(325498)

8015
X 14
(112210)
- 36542
(75668)

Part XXXVI, Exercise BB

Chalkboard drill problems of multiplication with subtraction and addition.

```
(1)  4 X 3 = (12)     2 X 5 = (10)       3 X 5 = (15)
             + 5            - 4                  - 3
             (17)           ( 6)                 (12)

     3 X 3 = (9)      14 X 2 = (28)      23 X 4 = (92)
             + 4               -13                + 23
             (13)              (15)               (115)

52 X 3 = (156)     45       36       78
         + 43     X 12     X 27     X 36
         (199)    (540)    (972)    (2808)
                   -34     -254     -1534
                  (506)    (718)    (1274)


(2)   3 + 4 = (7)        5 + 4 = (9)        23 + 3 = (26)
              X5                 X 3                 X 13
             (35)               (27)                (338)
            - 12               - 13                - 243
             (23)               (14)                ( 95)

      42 + 15 (57)       106        528       879
              X  8      - 23        -42      -534
            ( 456)       (83)      (486)     (345)
             -367        X 4        X 3       X12
            (   89)     (332)     (1458)    (4140)
                         +15       +243      +355
                        (347)     (1701)    (4495)

       907         1258         2039
      -635         -344        - 673
      (272)        (914)       (1366)
      X 23          X 7          X 9
     (6256)       (6398)     (12,294)
      + 87        -4863        3,658
     (6343)       (1535)     ( 8,636)
```

Part XXXVI, Exercise A

(1) $4.05; $4.05, $139.05; $30.95

(2) $10.20; $10.20, $350.20; $74.80

Part XXXVI, Exercise A (Continued)

(3) $285.00; $8.55; $4543.55; $458.55

(4) $425. loan amt. of options; $12.75 increase; $437.75; $3940.00; $392.75 diff ; $4377.75 whsl. price with options.

(5) $235.65; $355.00

Part XXXVI, Exercise B

(1) $20.85 amount of discount from list price; $20.85 amount discounted; $118.15 dealers cost

(2) $119.24 amount to discount from list; $119.24; $422.76 dealer cost.

(3) $666.49

(4) $5219.84

(5) $5423.92

(6) $5005.02

(7) $5,135.46 total dealers cost; $5443.59 Fair Price

(8) Dealer Cost on optional equipment $1006.98; dealer's cost of car with optional equipment $4688.98; dealer profit at 4% $187.56; Total price to dealer at 4% $4876.54

(9) Dealer's cost $5521.16; selling price $5797.21

(10) $4983.64

Part XXXVII, Exercise AA

Drill problems of multiplication with subtraction

(1) 4 - 2 X 5 = (10) 3 X 3 - 4 = (5) 2 X 4 - 2 = (6)

7 - 3 X 2 = (8) 8 - 4 X 3 = (12) 6 - 3 X 3 = (9)

Part XXXVII, Exercise AA (Continued)

5 - 3 X 5 = (10)   4 X 3 - 5 = (7)   5 X 2 - 5 = (5)

4 X 2 - 3 = (5)

(2) $\begin{array}{r} 14 \\ \text{X}\ \ 2 \\ \hline (28) \end{array} - 12 = (16)$ $\begin{array}{r} 12 \\ \text{X}\ 3 \\ \hline (36) \end{array} - 15 = (21)$ $\begin{array}{r} 13 \\ \text{X}\ 4 \\ \hline (52) \end{array} - 14 = (38)$

$\begin{array}{r} 45 \\ -13 \\ \hline (32) \end{array} \text{ X } 4 = (128)$ $\begin{array}{r} 31 \\ \text{X}\ 2 \\ \hline (62) \\ -15 \\ \hline (47) \end{array}$ $\begin{array}{r} 52 \\ \text{X}\ \ 3 \\ \hline (156) \\ -54 \\ \hline (102) \end{array}$ $\begin{array}{r} 44 \\ -15 \\ \hline (29) \\ \text{X}\ 2 \\ \hline (58) \end{array}$ $\begin{array}{r} -\ 22 \\ \text{X}\ 13 \\ \hline (\ 9) \\ \text{X}\ 4 \\ \hline (36) \end{array}$

$\begin{array}{r} 31 \\ \text{X}\ 5 \\ \hline (155) \end{array} - 35 = (120)$ $\begin{array}{r} 35 \\ \text{X}\ \ 2 \\ \hline (70) \end{array} - 45 = (25)$

(3) 7 - 3 X 6 = (24)   9 - 6 X 8 = (24)   8 - 3 X 7 = (35)

$\begin{array}{r} 66 \\ -\ 37 \\ \hline (29) \end{array} \text{ X } 3 = (87)$ $\begin{array}{r} 86 \\ -\ 49 \\ \hline (37) \end{array} \text{ X } 6 = (222)$ $\begin{array}{r} 79 \\ -\ 53 \\ \hline (26) \end{array} \text{ X } 7 = (182)$

$\begin{array}{r} 78 \\ \text{X}\ 9 \\ \hline (702) \end{array} - 67 = (635)$ $\begin{array}{r} 96 \\ \text{X}\ 9 \\ \hline (864) \\ -96 \\ \hline (768) \end{array}$ $\begin{array}{r} 77 \\ \text{X}\ 7 \\ \hline (539) \\ -154 \\ \hline (385) \end{array}$ $\begin{array}{r} 98 \\ \text{X}\ 8 \\ \hline (784) \\ -538 \\ \hline (246) \end{array}$ $\begin{array}{r} 87 \\ -\ 29 \\ \hline (58) \\ \text{X}\ 8 \\ \hline (464) \end{array}$

Part XXXVII, Exercise BB

Drill problems of multiplication, addition, and subtraction

(1) 4 X 2 + 5 = (13)   3 X 3 - 5 = (4)   5 X 4 - 5 = (15)

3 X 5 + 4 = (19)   4 X 4 + 4 = (20)   5 X 2 - 3 = (7)

4 X 3 - 4 = (8)   3 X 2 + 5 = (11)   4 X 3 - 1 = (11)

4 + 3 X 1 = (7)

(2) 7 X 3 + 8 = (29)   8 X 4 - 7 = (25)   6 X 7 - 4 = (38)

7 X 9 + 8 = (71)

Part XXXVII, Exercise BB (Continued)

$$\begin{array}{r} 8 \\ \text{X } 6 \\ \hline (48) \end{array} + 9 = (57) \qquad \begin{array}{r} 7 \\ \text{X } 7 \\ \hline (49) \\ -\ 28 \\ \hline (21) \\ +\ 17 \\ \hline (38) \end{array} \qquad \begin{array}{r} 8 \\ \text{X } 8 \\ \hline (64) \\ +\ 7 \\ \hline (71) \\ -\ 18 \\ \hline (53) \end{array} \qquad \begin{array}{r} 9 \\ \text{X } 6 \\ \hline (54) \\ +\ 9 \\ \hline (63) \\ -27 \\ \hline (36) \end{array}$$

$$\begin{array}{r} 3 \\ +\ 5 \\ \hline (8) \\ \text{X } 7 \\ \hline (56) \\ -\ 9 \\ \hline (47) \end{array} \qquad \begin{array}{r} 4 \\ -\ 3 \\ \hline (1) \\ +\ 7 \\ \hline (8) \\ \text{X } 9 \\ \hline (72) \end{array}$$

(3) 16 X 5 + 3 = (83)   64 X 3 - 25 = (167)   87 X 8 - 63 = (633)

$$\begin{array}{r} 96 \\ \text{X } 7 \\ \hline (672) \\ +\ 14 \\ \hline (686) \end{array} \qquad \begin{array}{r} 79 \\ \text{X } 6 \\ \hline (474) \\ +28 \\ \hline (502) \end{array} \qquad \begin{array}{r} 67 \\ \text{X } 9 \\ \hline (603) \\ -\ 247 \\ \hline (356) \end{array} \qquad \begin{array}{r} 89 \\ \text{X } 5 \\ \hline (445) \\ -\ 78 \\ \hline (367) \end{array} \qquad \begin{array}{r} 76 \\ \text{X } 4 \\ \hline (304) \\ -\ 177 \\ \hline (127) \end{array}$$

$$\begin{array}{r} 69 \\ +\ 8 \\ \hline (77) \\ \text{X } 3 \\ \hline (231) \end{array} \qquad \begin{array}{r} 84 \\ -\ 9 \\ \hline (75) \\ \text{X } 2 \\ \hline (150) \end{array}$$

Part XXXVII, Exercise CC

Drill problems of multiplication and subtraction

(1) 3 X 3 - 2 = (7)

$$\begin{array}{r} 4 \\ \text{X}2 \\ \hline (8) \\ -\ 4 \\ \hline (4) \end{array} \qquad \begin{array}{r} 5 \\ \text{X } 3 \\ \hline (15) \\ -\ 3 \\ \hline (12) \end{array} \qquad \begin{array}{r} 3 \\ -\ 2 \\ \hline (1) \\ \text{X } 5 \\ \hline (5) \end{array}$$

5 - 3 X 3 = (6)

4 X 4 - 5 = (11)

$$\begin{array}{r} 3 \\ \text{X } 3 \\ \hline (9) \\ -\ 2 \\ \hline (7) \end{array} \qquad \begin{array}{r} 5 \\ \text{X } 2 \\ \hline (10) \\ -\ 5 \\ \hline (5) \end{array} \qquad \begin{array}{r} 4 \\ \text{X } 3 \\ \hline (12) \\ -\ 5 \\ \hline (\ 7) \end{array}$$

5 - 2 X 5 = (15)

Part XXXVII, Exercise CC (Continued)

(2)

$$\begin{array}{r} 14 \\ \text{X}\ \ 3 \\ \hline (42) \\ -12 \\ \hline (30) \end{array} \quad \begin{array}{r} 25 \\ -\ 11 \\ \hline (14) \\ \text{X}\ 2 \\ \hline (28) \end{array} \quad \begin{array}{r} 25 \\ \text{X}\ \ 2 \\ \hline (50) \\ -43 \\ \hline (\ 7) \end{array} \quad \begin{array}{r} 13 \\ \text{X}\ 4 \\ \hline (52) \\ -\ 23 \\ \hline (29) \end{array} \quad \begin{array}{r} 53 \\ \text{X}\ \ 2 \\ \hline (106) \\ -\ 42 \\ \hline (\ 64) \end{array} \quad \begin{array}{r} 43 \\ \text{X}\ 4 \\ \hline (172) \\ -135 \\ \hline (\ 37) \end{array}$$

$$\begin{array}{r} 35 \\ -\ 21 \\ \hline (14) \\ \text{X}\ 4 \\ \hline (56) \end{array} \quad \begin{array}{r} 41 \\ -\ 24 \\ \hline (17) \\ \text{X}\ 3 \\ \hline (51) \end{array} \quad \begin{array}{r} 45 \\ \text{X}\ 3 \\ \hline (135) \\ -42 \\ \hline (\ 93) \end{array}$$

24 X 4 - 35 = (61)

(3) 7 X 6 - 5 = (37)   8 X 8 - 4 = (60)   6 X 8 - 7 = (41)

9 X 6 - 9 = (45)   7 X 9 - 4 = (59)   7 X 7 - 3 = (46)

$$\begin{array}{r} 9 \\ \text{X}\ 8 \\ \hline (72) \\ -9 \\ \hline (63) \end{array} \quad \begin{array}{r} 8 \\ \text{X}\ 7 \\ \hline (56) \\ -18 \\ \hline (38) \end{array} \quad \begin{array}{r} 6 \\ \text{X}\ 8 \\ \hline (48) \\ -39 \\ \hline (\ 9) \end{array} \quad \begin{array}{r} 7 \\ \text{X8} \\ \hline (56) \\ -28) \\ \hline (28) \end{array}$$

Part XXXVII, Exercise DD

Drill problems of addition, subtraction, multiplication

(1)

$$\begin{array}{r} 3 \\ +\ 4 \\ \hline (7) \\ -\ 2 \\ \hline 5 \\ \text{X}\ 3 \\ \hline (45) \end{array}$$

2 + 3 - 2 X 4 = (12)   3 X 4 = (12) (12) + 3 = (15)

(15) - 5 = (10)

$$\begin{array}{r} 3 \\ \text{X}\ 4 \\ \hline (12) \\ -2 \\ \hline (10) \\ +\ 5 \\ \hline (15) \end{array} \quad \begin{array}{r} 5 \\ \text{X}\ 2 \\ \hline (10) \\ -4 \\ \hline (\ 6) \\ +\ 3 \\ \hline (\ 9) \end{array} \quad \begin{array}{r} 4 \\ \text{X4} \\ \hline (16) \\ -5 \\ \hline (11) \\ +\ 3 \\ \hline (14) \end{array} \quad \begin{array}{r} 5 \\ \text{X}\ 3 \\ \hline (15) \\ +\ 4 \\ \hline (19) \\ -\ 5 \\ \hline (14) \end{array} \quad \begin{array}{r} 2 \\ +\ 3 \\ \hline (5) \\ \text{X}\ 3 \\ \hline (15) \\ -\ 12 \\ \hline (\ 3) \end{array} \quad \begin{array}{r} 9 \\ -\ 4 \\ \hline (5) \\ \text{X}\ 3 \\ \hline (15) \\ -\ 4 \\ \hline (11) \end{array} \quad \begin{array}{r} 4 \\ \text{X}\ 3 \\ \hline (12) \\ +\ 4 \\ \hline (16) \\ -12 \\ \hline (\ 4) \end{array}$$

Part XXXVII, Exercise DD (Continued)

(2)

23	45	14	51	33	42	25
+ 6	- 7	X 9	- 8	- 7	+ 6	- 6
(29)	(38)	(126)	(43)	(26)	(48)	(19)
- 8	+ 3	+ 13	X 8	X 7	X 3	X 6
(21)	(41)	(139)	(344)	(182)	(144)	(114)
X 7	X 6	-53	+29	+ 18	- 38	- 93
(147)	(246)	(86)	(373)	(200)	(106)	(21)

34	45	44
+17	- 31	+ 29
(51)	(4)	(73)
X 6	+ 68	X 9
(306)	(72)	(657)
-178	X 8	- 288
(128)	(576)	(369)

(3)

67	87	69	76	97	78	66
X 3	X 4	+ 38	- 39	-48	X 4	- 12
(201)	(348)	(107)	(37)	(49)	(312)	(54)
-78	+ 73	X 5	+ 27	+ 4	-98	X 3
(123)	(421)	(535)	(64)	(53)	(214)	(162)
+ 49	- 86	-397	X 2	X 5	+ 47	+87
(172)	(335)	(138)	(128)	(265)	(261)	(249)

76	98	88
X 5	X 2	X 3
(380)	(196)	(264)
-74	-48	-78
(306)	(148)	(186)
+ 59	+ 37	+ 47
(365)	(185)	(233)

(4)

384	615	279	508	107	416	309
X 7	X 9	+ 33	X 7	+ 83	-209	X 6
(2688)	(5535)	(312)	(3556)	(190)	(207)	(1854)
-345	-1807	X 6	+ 948	X 5	X 9	+283
(2343)	(3728)	(1872)	(4504)	(950)	(1863)	(2137)
745	+804	-894	-182	-83	-988	-98
(3088)	(4532)	(978)	(4322)	(867)	(875)	(2039)

217
-138
(79)
+306
(385)
X 4
(1540)

Part XXXVII, Exercise A

(1) $162.96 less (2) $949.20 interest for one year; $189.84 more.

(3) $594.00 interest for one year; $1782.00 after three years; $445.50 less interest.

(4) $1604.00 list price of optional equipment. $1219.04 list price of optional equipment by 76 % .

(5) $1249.00 list price of the optional equipment; $974.22 dealers cost of the equipment.

Part XXXVII, Exercise B

(1) $1744.00 list price; $1360.32 dealer cost; $4807.32 dealer cost with equipment. $5095.76 6% over dealer cost.

(2) $1,134.00 list price of optional equipment; $884.52 dealer cost of optional equipment; $4882.52 dealer cost of the car fully equipped; $292.95 dealer's profit; $4882.52 dealer cost of car fully equipped $5175.47 dealer's price

(3) $1618.00 list price of optional equipment; $1262.04 Dealer cost of equipment; $4621.04 Dealer cost of car with equipment; $184.84 dealer profit at four per cent; $4621.04 dealer cost of car with equipment; $4805.88 amount the customer wants to pay for car.

(4) $1835.00 market price; $215.00 total loan price of equipment; $6.45 amount of wholesale price above the loan price; $215.00 loan price of equipment; $221.45 wholesale price of equipment; $453.55 more of market price with the equipment than the wholesale price.

(5) $745.00 difference; $83.75 difference between the market price and the wholesale price.

Part XXXVII, Exercise C

(1) $102.81 cost (2) $103.60 (3) $118.40 (4) $397.47 without tax; $417.34 with tax. (5) $124.57 without tax; $130.80 with tax.

Part XXXVII, Exercise D

(1) $19.15 (2) $71.08 (3) $76.33 (4) $11.96 exhaust valves; $8.07 intake valves; $13.98 valve springs; Total $154.91; Discount 12% $18.59 Total $136.32; Tax @ 5% $6.82; Total $143.14

(5) $9.03 valve guides intake; $10.32 valve guides exhaust; Total $82.31; Discount 9% $7.41; Total $74.90; Tax 5% $3.74; Total $78.64

(6) Spin-on filters $75.24; Cartridges $20.85; $111.34 profit on 38 filters; $41.85 profit on 15 filters ; $11.74 tax

(7) $98.08 (8) $34.10

Part XXXVIII, Exercise AA Test

Multiplication, addition, and subtraction

$$(1)\quad \begin{array}{rrrrrrr} 3 & 2 & 5 & 4 & 5 & 2 & 1 \\ \underline{\text{X}4} & \underline{+\ 2} & \underline{-\ 3} & \underline{\text{X}\ 5} & \underline{-\ 2} & \underline{+\ 3} & \underline{+\ 2} \\ (12) & (4) & (2) & (20) & (3) & (5) & (3) \\ \underline{+\ 5} & \underline{\text{X}\ 2} & \underline{\text{X}\ 5} & \underline{+\ 3} & \underline{\text{X}\ 4} & \underline{\text{X}\ 5} & \underline{\text{X}\ 3} \\ (17) & (8) & (10) & (23) & (12) & (25) & (9) \end{array}$$

$$\begin{array}{rrr} 4 & 5 & 3 \\ \underline{-\ 1} & \underline{-\ 4} & \underline{-\ 1} \\ (3) & (1) & (2) \\ \underline{\text{X}\ 2} & \underline{\text{X}\ 3} & \underline{\text{X}\ 4} \\ (6) & (3) & (8) \end{array}$$

Part XXXVIII, Exercise AA Test (Continued

(2)	13	13	24	12	11	23	41
	X 4	+ 2	- 12	+ 11	X 5	- 5	+ 12
	(52)	(15)	(12)	(23)	(55)	18	(53)
	- 21	X 3	X 4	X2	- 32	+ 3	X 2
	(31)	(45)	(48)	(46)	(23)	(41)	106
						X 2	- 34
						(82)	(72)

	15	34	23
	- 3	+11	X 4
	(12)	(45)	(92)
	X 4	X 3	+ 7
	(48)	(135)	(99)
	-25	-43	-13
	(23)	(92)	(86)

(3)	7	8	9	6	7
	X6	X 3	X 7	X 8	X 4
	(42)	(24)	(63)	(48)	(28)
	+ 27	-13	-25	+ 17	+ 21
	(69)	(11)	(38)	(65)	(49)

(4)	18	26	47	95	63	76	82
	X 5	+ 13	-24	X 2	-29	X 7	- 17
	(90)	(39)	(23)	(190)	(34)	(532)	(65)
	+ 16	X 4	X 3	-43	X 3	-28	X 2
	(106)	(156)	(69)	(147)	(102)	(504)	(130)
						+ 49	+69
						(553)	(199)

	58	29	57
	+ 14	- 13	+ 15
	(72)	(16)	(72)
	X 4	X 9	X 8
	(288)	(144)	(576)
	-49	+27	-84
	(239)	(171)	(492)

(5)	318	827	680	98	138
	X 6	- 598	- 482	+156	+ 265
	(1908)	(229)	198	254	(303)
	-17	X 8	X 7	X 9	X 5
	(1891)	(1832)	(1386)	(2286)	(1515)
	+349	+ 274	+258	-1768	388
	(2240)	(2106)	(1644)	(518)	(1127)

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Part XXXVIII, Exercise A

(1) 12 (2) 10 (3) 20 (4) 36 (5) 9 (6) 31 (7) 98

(8) 267 (9) 268 (10) 501 (11) 279 (12) 2977 (13) 6566

(14) 67,500 (15) 3,435,885 (16) 16,004,403 (17) 4764

(18) 3739 (19) 2028 (20) 15,604

Part XXXVIII, Exercise B

(1) 2 (2) 8 (3) 19 (4) 61 (5) 835 (6) 3763 (7) 40,985

(8) 41,517 (9) 583,383 (10) 776,741

Part XXXVIII, Exercise C

(1) 21 (2) 124 (3) 65 (4) 109 (5) 2314 (6) 52,501

(7) 37,038 (8) 28,285 (9) 49,213 (10) 196,803

Part XXXIX, Exercise AA Test

Stated Problems

(1) Martin Garage ordered the following parts: 12 oil filters, stk. no. 4321 X @ $3.12 each. How much did all of the filters cost?

($37.44)

(2) Hanson Garage ordered one generator belt, stk. no. 5320 P @ $2.43; one camshaft kit, stk. no. 53-4206 N @ $23.51. How much is the total order?

($25.94)

(3) The Jones family are wanting to buy a new car. They found a Ford Granada that had a list price of $4264.00 without optional equipment. Fully equipped the car's list price was $5699.00. Find the list price

of the optional equipment?

($1435.00)

(4) The Brown family found a car that had a dealer's cost of $4552.00 with the dealer's cost of the optional equipment costing $951.52. How much is the dealer's cost with the optional equipment?

($5503.52)

(5) The Brown family found another car with a dealers cost including optional equipment $5493.26. The dealer would sell the car at six per cent above the total dealer cost. How much is the price of the car?

($5822.86)

(6) The Vasquez family wanted to buy a new Dodge Aspen. They found the optional equipment they wanted had a list price of $928.00 To find the dealer's cost of the equipment, they must use the dealer's cost multiplier of 76 per cent. The dealer's base car price is $3590.00. If, they buy the car at 4 per cent over dealer's cost, how much is the price?

($4,467.09)

(7) Harkins Garage ordered the following parts: 13 intake valves @ $2.98 each; 15 exhaust valves @ $2.98 each; 5 camshaft kits @ $43.49 each. They sold all of the above parts @ 15 per cent above the order prices. How much did the garage pay for the parts? Give the selling price of each part. Give the total selling price . Give the difference between the total selling price and the total cost price to the garage.

(Garage paid $300.84; selling price $346.02; difference $45.13)

(8) We Fix It Garage repaired Mr. Olds car. They removed and replaced three intake valves and five exhaust valves. Each valve cost the garage $2.45. They put in eight new spark plugs which cost the garage 95¢ each. The labor charge was two hours @ $12.00 per hour. The customer was charged 23 per cent above the cost to the garage for the valves. The garage charged the customer $2.78 for each spark plug. How much did the We Fix It Garage charge the customer? How much did the garage make from the sale of parts?

(Customer was charged $70.35. Profit from parts was $19.15)

(9) The Barnes family was looking at a new car. Their old car originally cost them $4135.00; the car has depreciated by 40 per cent. The new car's optional equipment at list prices included white steel belted radial tires $94.00; AM/FM radio $239.00; Air Conditioning $581.00; and Tinted Glass, $76.00. The Dealers Cost Multiplier, to find the dealer's cost of the options, is 77 per cent. The Dealers cost for the car without these options is $5251.00. If the dealer will price the new car with optional equipment at 4 per cent above dealer cost, how much will that price be? If the dealer will take the Barnes family car at the depreciated price less 4 per cent, what will be the cost difference between the new car and the old car? ($6253.83 dealer cost plus 4%; $3872.05 difference between new and old car prices.)

(10) If General Car Company sold 17 cars @ $5325.00 each in one week, and they made a 6 per cent profit on each car, how much money

Part XXXIX, Exercise AA Test (Continued)

did the company make selling cars in that week?

($5431.50)

Part XXXIX, Exercise A

(1) $1583.00 list price of op. equip.; $1234.74 dealer cost of op. equip.; $5275.74 dealer cost fully equipped; $5275.74 dealer cost price; $1187.26 dealer profit

(2) $1090. price of optional equipment. $926.50 dealer's cost of optional equipment. $628.50 profit.

(3) $1411.00 list price of optional equipment; $1199.35 dealer cost of optional equipment; $4881.35 Total dealer cost; $859.65 Profit made by the dealer.

(4) $870.72

(5) $466.48

(6) $4881.35 dealer cost price; $292.88 dealer cost multiplied by 6 % ; $5174.23 market price; $97.63 savings.

(7) $1590.00 list price of op. equip; $1240.20 dealer cost of equip.; $5841.87 was bid; $628.13 less.

(8) $4649.44

Part XXXIX, Exercise B

(1) $349.62 amt. paid for parts; $ 395.07 amt. sold; $45.45 profit

(2) $337.76

(3) $ 76.67

(4) $137.41

Part XXXIX, Exercise B (Continued)

(5) $63.36

(6) $337.39

(7) $178.47 cost to garage; $3.89 each for sale; $47.07 profit; 24%

(8) $32.12 state tax; $2.03 made on the kit

Part XL, Exercise A

(1) 12.566 (2) 7.069 (3) 14.727 (4) 16.99

(5) 343

(6) 199

(7) 410

(8) 171

(9) 225

(10) 339

Part XL, Exercise B

(1) 2 (2) 2 (3) 3; 2 (4) 2; 4 (5) 6; 4; 3; 2

(7) 5; 5; 10; 3; 9;

(8) 10; 10; 20; 5; 5; 20; 2; 2; 20; 4; 4; 20

(9) 18; 17; 14

Part XL, Exercise C

(1) 2 (2) 3 (3) 2 (4) 3 (5) 2 (6) 3 (7) 4 (8) 12

(9) 18 (10) 9 (11) 9 (12) 27 (13) 41 (14) 17 (15) 13

(16) 13 (17) 26 (18) 24 (19) 17 (20) 16

Part XL, Exercise D

(1) 4 (2) 2 (3) 3 (4) 6 (5) 3 (6) 12 (7) 3 (8) 4

(9) 15 (10) 15 (11) 9 (12) 8 (13) 9 (14) 13 (15) 46

(16) 15 (17) 16 (18) 13 (19) 7 (20) 9

Part XLI, Exercise AA Test

Division Problems

(1) $4 \div 2 = (2)$ $2\overset{(3)}{\overline{)6}}$ $3\overset{(3)}{\overline{)9}}$ $8 \div 4 = (2)$ $5\overset{(2)}{\overline{)10}}$ $4\overset{(3)}{\overline{)12}}$

$3\overset{(5)}{\overline{)15}}$ $4\overset{(5)}{\overline{)20}}$ $1\overset{(4)}{\overline{)4}}$ $3\overset{(4)}{\overline{)12}}$

(2) $2\overset{(12)}{\overline{)24}}$ $3\overset{(6)}{\overline{)18}}$ $2\overset{(21)}{\overline{)42}}$ $4\overset{(20)}{\overline{)80}}$ $3\overset{(23)}{\overline{)69}}$ $5\overset{(12)}{\overline{)60}}$

$4\overset{(13)}{\overline{)52}}$ $3\overset{(31)}{\overline{)93}}$ $2\overset{(34)}{\overline{)68}}$ $5\overset{(13)}{\overline{)65}}$

(3) $6\overset{(3)}{\overline{)18}}$ $7\overset{(5)}{\overline{)35}}$ $9\overset{(4)}{\overline{)36}}$ $8\overset{(6)}{\overline{)48}}$ $9\overset{(6)}{\overline{)54}}$ $7\overset{(9)}{\overline{)63}}$

$6\overset{(9\ r2)}{\overline{)56}}$ $9\overset{(9)}{\overline{)81}}$ $7\overset{(8)}{\overline{)56}}$ $8\overset{(8\ r1)}{\overline{)65}}$

(4) $2\overset{(162)}{\overline{)324}}$ $5\overset{(131)}{\overline{)655}}$ $3\overset{(291)}{\overline{)873}}$ $4\overset{(242)}{\overline{)968}}$ $3\overset{(215\ r1)}{\overline{)646}}$

$2\overset{(437)}{\overline{)874}}$ $4\overset{(227)}{\overline{)908}}$ $5\overset{(71)}{\overline{)375}}$ $3\overset{(96)}{\overline{)288}}$ $5\overset{(176)}{\overline{)880}}$

(5) $9\overset{(32)}{\overline{)288}}$ $7\overset{(43)}{\overline{)301}}$ $6\overset{(87)}{\overline{)522}}$ $8\overset{(95)}{\overline{)760}}$ $5\overset{(197\ r2)}{\overline{)989}}$

$9\overset{(97\ r3)}{\overline{)876}}$ $6\overset{(89\ r5)}{\overline{)539}}$ $3\overset{(326)}{\overline{)978}}$ $4\overset{(177\ r1)}{\overline{)709}}$ $7\overset{(78\ r3)}{\overline{)549}}$

Part XLI, Exercise A

(1) 3 r 1 (2) 2 r 2 (3) 5 r 2 (4) 9 r 0 (5) 8 r 0

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Part XLI, Exercise A (Continued)

(6) 9 r 2 (7) 21 r 0 (8) 23 r 0 (9) 3 r 0 (10) 10 r 3

(11) 213 (12) 121 (13) 248 (14) 165 (15) 262 (16) 232

(17) 390 (18) 30 (19) 75 (20) 143

Part XLI, Exercise B

(1) 4 (2) 5 (3) 3 (4) 6 (5) 7 (6) 9 (7) 8 (8) 10

(9) 11 (10) 12

Part XLI, Exercise C

(1) 3 (2) 4 (3) 20 (4) 6 (5) 5 (6) 44 (7) 7

(8) 32 (9) 9 (10) 15 (11) 25 (12) 50 (13) 35 (14) 39

(15) 28 (16) 52 (17) 100 (18) 150 (19) 31 (20) 175

Part XLII, Exercise A

(1) 4 (2) 4.5 (3) 5.3 (4) 3.2 (5) 2.8 (6) 3.9 (7) 6.7

(8) 8.6 (9) 10.3 (10) 23.4 (11) 35.6 (12) 46.3 (13) 93.7

(14) 302.9 (15) 416.8 (16) 837.4 (17) 197.6 (18) 5376.2

(19) 30.7 (20) 400.2

Part XLII, Exercise B

(1) 1 (2) 3 (3) 5 (4) 4 (5) 2 (6) 2 r 3 (7) 12 r 14

(8) 23 (9) 42 r 4 (10) 49 r 7 (11) 15 r 5 (12) 33 r 14

(13) 20 r 7 (14) 326 r 18 (15) 3951 r 1 (16) 1515 r 5

(17) 3981 r 10 (18) 4517 r 10 (19) 4395 r 6 (20) 1535 r8

Part XLIII, Exercise A

(1) 1 (2) 2 (3) 2 (4) 2 (5) 33 (6) 11 (7) 40 r3 (8) 15

(9) 80 r7 (10) 22 (11) 35 r 16 (12) 333 (13) 621 r3

(14) 1206 (15) 145 r8 (16) 6822 r8 (17) 85 r6

(18) 126 r6 (19) 273 r5 (20) 430 r5

Part XLIII, Exercise B

(1) 2 (2) 3 (3) 2 (4) 3 (5) 2 (6) 2 (7) 2 (8) 3

(9) 4 (10) 3 (11) 2 (12) 6 (13) 4 (14) 4 (15) 2

(16) 3 (17) 3 (18) 5 (19) 4 (20) 6 r2

Part XLIII, Exercise C

(1) 10 (2) 11 (3) 12 (4) 22 (5) 5 (6) 21 (7) 3 (8) 21

(9) 23 (10) 39 (11) 17 r17 (12) 21 (13) 42 (14) 13 r20

(15) 22 r36 (16) 20 (17) 4 (18) 6 (19) 20 r3 (20) 22

Part XLIV, Exercise AA Test

Division Problems

(1) $\begin{array}{r}(1)\\10\,\overline{)10}\end{array}$ $\begin{array}{r}(10)\\10\,\overline{)100}\end{array}$ $\begin{array}{r}(3)\\11\,\overline{)33}\end{array}$ $\begin{array}{r}(24)\\12\,\overline{)288}\end{array}$ $\begin{array}{r}(\ 32)\\21\,\overline{)672}\end{array}$

$\begin{array}{r}(4)\\31\,\overline{)124}\end{array}$ $\begin{array}{r}(22)\\25\,\overline{)550}\end{array}$ $\begin{array}{r}(22)\\40\overline{)880}\end{array}$ $\begin{array}{r}(24)\\16\,\overline{)384}\end{array}$ $\begin{array}{r}(33)\\17\,\overline{)561}\end{array}$

(2) $\begin{array}{r}(4)\\18\,\overline{)72}\end{array}$ $\begin{array}{r}(3)\\29\,\overline{)87}\end{array}$ $\begin{array}{r}(8)\\42\,\overline{)336}\end{array}$ $\begin{array}{r}(6)\\23\overline{)\ 138}\end{array}$ $\begin{array}{r}(4)\\19\,\overline{)76}\end{array}$

$\begin{array}{r}(\ 20)\\24\,\overline{)480}\end{array}$ $\begin{array}{r}(12)\\53\,\overline{)636}\end{array}$ $\begin{array}{r}(21)\\38\,\overline{)798}\end{array}$ $\begin{array}{r}(14)\\27\,\overline{)378}\end{array}$ $\begin{array}{r}(10\ r32)\\75\,\overline{)782}\end{array}$

Part XLIV, Exercise BB Test

Drill division problems

(1) $11\,\overset{(22)}{\overline{)242}}$ $21\,\overset{(52)}{\overline{)1092}}$ $13\,\overset{(32)}{\overline{)416}}$ $37\,\overset{(12)}{\overline{)444}}$ $29\,\overset{(14)}{\overline{)406}}$ $17\,\overset{(15)}{\overline{)255}}$

$16\,\overset{(\ 33)}{\overline{)528}}$ $24\,\overset{(15)}{\overline{)360}}$ $32\,\overset{(21)}{\overline{)672}}$ $21\,\overset{(19)}{\overline{)399}}$

(2) $13\,\overset{(24\text{ r4})}{\overline{)186}}$ $17\,\overset{(23\text{ r7})}{\overline{)398}}$ $12\,\overset{(26\text{ r8})}{\overline{)320}}$ $15\,\overset{(23\text{ r4})}{\overline{)349}}$ $28\,\overset{(16\text{ r2})}{\overline{)250}}$

$37\,\overset{(12\text{ r3})}{\overline{)487}}$ $48\,\overset{(13\text{ r6})}{\overline{)630}}$ $57\,\overset{(17\text{ r1})}{\overline{)970}}$ $63\,\overset{(15\text{ r5})}{\overline{)950}}$ $72\,\overset{(12\text{ r6})}{\overline{)870}}$

Part XLIV, Exercise A

(1) 11 r7 (2) 13 r4 (3) 12 r5 (4) 13 r2 (5) 21 r5

(6) 31 r7 (7) 61 r1 (8) 215 r18 (9) 26 r6 (10) 42 r2

(11) 58 r14 (12) 104 r13 (13) 37 r11 (14) 88 r48 (15) 74 r42

(16) 12 r2 (17) 148 r30 (18) 22 r12 (19) 20 r41 (20) 104 r57

Part XLIV, Exercise B

(1) 21.2 (2) 21.6 (3) 2.12 (4) 1.31 (5) .316 (6) 8.94

(7) 2.144 (8) .42 (9) .322 (10) 62.2 (11) 1.055 (12) 4.92

(13) 69.2 (14) .0628 (15) .356 (16) .798 (17) 4.909

(18) .1977 (19) 85.4 (20) .9896

Part XLV, Exercise AA

Drill problems division for the chalkboard

(1) $12\,\overset{(12)}{\overline{)144}}$ $14\,\overset{(11)}{\overline{)154}}$ $11\,\overset{(23)}{\overline{)253}}$ $16\,\overset{(15)}{\overline{)240}}$ $17\,\overset{(21)}{\overline{)357}}$

$13\,\overset{(23)}{\overline{)299}}$ $24\,\overset{(13)}{\overline{)312}}$ $32\,\overset{(15)}{\overline{)480}}$ $37\,\overset{(18)}{\overline{)666}}$ $42\,\overset{(23)}{\overline{)966}}$

Part XLV, Exercise AA (Continued)

(2) $\overset{(13\text{ r}3)}{19\overline{)250}}$ $\overset{(17\text{ r}7)}{23\overline{)398}}$ $\overset{(14\text{ r}6)}{36\overline{)510}}$ $\overset{(27\text{ r}9)}{29\overline{)762}}$

$\overset{(15\text{ r}8)}{32\overline{)488}}$ $\overset{(12\text{ r}6)}{47\overline{)570}}$

Part XLV, Exercise BB

Drill Division problems for the chalkboard

(1) $\overset{(234)}{11\overline{)2574}}$ $\overset{(352)}{21\overline{)7392}}$ $\overset{(423)}{13\overline{)5499}}$ $\overset{(215)}{24\overline{)5160}}$ $\overset{(221)}{32\overline{)7072}}$

$\overset{(315)}{25\overline{)7875}}$ $\overset{(124)}{16\overline{)1984}}$ $\overset{(135)}{22\overline{)2970}}$ $\overset{(132)}{34\overline{)4488}}$ $\overset{(142)}{18\overline{)2556}}$

(2) $\overset{(212)}{46\overline{)9752}}$ $\overset{(134)}{53\overline{)7102}}$ $\overset{(153)}{48\overline{)7344}}$ $\overset{(342)}{64\overline{)21888}}$ $\overset{(465)}{29\overline{)13485}}$

$\overset{(435)}{58\overline{)25230}}$ $\overset{(342)}{72\overline{)24624}}$ $\overset{(547)}{37\overline{)20239}}$ $\overset{(2534)}{12\overline{)30408}}$ $\overset{(3215)}{14\overline{)45010}}$

Part XLV, Exercise CC

Chalkboard drill division problems

(1) $\overset{(325)}{12\overline{)3900}}$ $\overset{(214)}{13\overline{)2782}}$ $\overset{(24)}{14\overline{)336}}$ $\overset{(2534)}{11\overline{)27874}}$ $\overset{(55)}{15\overline{)825}}$

$\overset{(32415)}{23\overline{)745545}}$ $\overset{(3154)}{28\overline{)88312}}$ $\overset{(43)}{15\overline{)645}}$ $\overset{(12453)}{17\overline{)211701}}$ $\overset{(2143)}{53\overline{)113579}}$

(2) $\overset{(3245)}{36\overline{)116820}}$ $\overset{(786)}{43\overline{)33798}}$ $\overset{(697)}{56\overline{)39032}}$ $\overset{(5784)}{62\overline{)358608}}$ $\overset{(3469)}{86\overline{)298334}}$

$\overset{(4278)}{92\overline{)393576}}$ $\overset{(519)}{94\overline{)48786}}$ $\overset{(769)}{78\overline{)59982}}$ $\overset{(498)}{86\overline{)42828}}$ $\overset{(2379)}{98\overline{)233142}}$

Part XLV, Exercise A

(1) 21 (2) 22 (3) 211 (4) .023 (5) .423 r3 (6) 2.21 r21

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Part XLV, Exercise A

(7) .12 r7 (8) 2.5 r48 (9) .99 r57 (10) .24 (11) .1305 r1
(12) .18 (13) .232 r1 (14) .02 (15) .19 (16) .203
(17) .021 r21 (18) 2.04 r1 (19) .02 r30 (20) .023 r70

Part XLV, Exercise B

(1) 10.3 (2) .3251 (3) 3.12 r2 (4) .424 r2 (5) 20.3
(6) .040 r3 (7) 3.256 r19 (8) 9.25 r10 (9) .417 r8 (10) .199 r17
(11) .209 r28 (12) .1106 r3 (13) .068 r11 (14) .0636 r17
(15) 2.37 r4 (16) 2.01 r58 (17) .0566 r75 (18) .050 r2
(19) .0438 r10 (20) 13.7 r6

Part XLV, Exercise C

(1) 1.041 (2) 2.3 (3) 4.305 (4) .30344 r3 (5) .10203
(6) 22.281 r17 (7) 26.141 r14 (8) 217.9 r26 (9) .2208 r21
(10) .29054 r26 (11) .2004 (12) 454.4 r24 (13) 1.1829 r16
(14) 520.05 r2 (15) .13583 r50 (16) 2.056 r8 (17) 1.206 r45
(18) .0942 r89 (19) 6.442 r43 (20) .03090 r77

Part XLVI, Exercise AA

Chalkboard drill of division problems with a decimal point in the division. Point out to students when the dividend is without a decimal point, one must be placed to the right of the numeral in the ones place. The divisor's decimal point must be moved to the right so the divisor has all whole numerals. A zero or zeroes must be placed by the "ones" numeral of the dividend place holder (s) and the decimal point moved to the

Part XLVI, Exercise AA (Continued)

right as far as the decimal point of the divisor was moved.

Ex.
3.2)123.0 becomes 32)1230

(305) (230) (205) (150)
(1) 1.2)366.0 1.1)253.0 1.4)287.0 2.4)360.0

(120) (160) (230) (106)
3.2)384.0 4.2)672.0 2.3)529.0 1.5)159.0

(105) (65)
5.4)567.0 3.4)221.0

(2365) (2175) (3480) (568)
(2) 1.6)3784.0 1.8)3915.0 2.7)9396.0 3.5)1988.0

(865) (350) (670) (690)
4.8)4152.0 6.7)2345.0 8.3)5561.0 9.8)6762.0

(740) (705)
7.9)5846.0 5.8)4089.0

Part XLVI, Exercise BB

Chalkboard drill of division with decimals

(1) (30) (20) (30) (50)
12.1)363.0 23.1)462.0 31.4)942.0 12.4)620.0

(40) (230) (140) (230)
14.5)580.0 35.4)8142.0 54.2)7588.0 41.3)9499.0

(210) (310)
43.5)9035.0 32.5)9975.0

(370) (460) (1070)
(2) 65.1)24087.0 78.2)35972.0 69.8)74686.0

(1090) (1670) (2030)
87.9)95811.0 59.7)99499.0 46.9)95207.0

(21300) (21106 r150) (30857 r68)
2.14)45582.00 3.25)78596.00 1.76)54309.00

(34772 r52)
2.84)98753.00

Part XLVI, Exercise CC Test

Division Problems

(1) $12\,\overset{(23)}{\overline{)276}}$ $11\,\overset{(14)}{\overline{)154}}$ $15\,\overset{(31)}{\overline{)465}}$ $21\,\overset{(14)}{\overline{)294}}$ $53\,\overset{(12)}{\overline{)636}}$

$4.3\,\overset{(150)}{\overline{)645}}$ $3.1\,\overset{(240)}{\overline{)744}}$ $2.3\,\overset{(140)}{\overline{(322}}$ $1.4\,\overset{(520)}{\overline{)728}}$ $4.5\,\overset{(210)}{\overline{)945}}$

(2) $1.6\,\overset{(5610)}{\overline{)8976}}$ $2.8\,\overset{(740)}{\overline{)2072}}$ $7.3\,\overset{(390)}{\overline{)2847}}$ $8.6\,\overset{(350)}{\overline{)3010}}$ $6.9\,\overset{(280)}{\overline{)1932}}$

$7.4\,\overset{(420)}{\overline{)3108}}$ $6.8\,\overset{(45)}{\overline{)306}}$ $4.9\,\overset{(320)}{\overline{)1568}}$ $9.2\,\overset{(35)}{\overline{)322}}$ $3.4\,\overset{(85)}{\overline{)289}}$

(3) $213\,\overset{(143)}{\overline{)30459}}$ $153\,\overset{(376)}{\overline{)57528}}$ $425\,\overset{(235)}{\overline{)99875}}$ $314\,\overset{(304)}{\overline{)95456}}$

$545\,\overset{(145)}{\overline{)79025}}$ $103\,\overset{(764)}{\overline{)78692}}$ $938\,\overset{(376)}{\overline{)352688}}$ $687\,\overset{(928)}{\overline{)727536}}$

$352\,\overset{(897)}{\overline{)315744}}$ $3.42\,\overset{(21500)}{\overline{)73530.00}}$ $7.25\,\overset{(40204)}{\overline{)301479.00}}$

Part XLVI, Exercise A

(1) 310. r10 (2) 25 (3) 3.2 (4) .42 (5) 23 (6) 207

(7) 24.5 r2 (8) 20.04 (9) 25.3 (10) 345 r3 (11) 843

(12) 4.79 (13) 6.37 r10 (14) 864 (15) 38.6 (16) 4730

(17) 6450 (18) .768 (19) 882 r12 (20) 6470

Part XLVI, Exercise B

(1) 42 r175 (2) 25 (3) .34 (4) .51 (5) 3.5 r2 (6) 6.31

(7) 2600 (8) 6.2 (9) 4.6 (10) 38 (11) .28 r2 (12) 790

(13) .86 (14) .0097 r1 (15) 870

Part XLVII, Exercise AA

Chalkboard drill of division problems with a decimal point in the divisor

Part XLVII, Exercise AA (Continued)

(1) $\overset{(340)}{.1\overline{)34.0}}$ $\overset{(176\ r2)}{.3\overline{)53}}$ $\overset{(225)}{.2\overline{)45}}$ $\overset{(30)}{.4\overline{)12}}$ $\overset{(48)}{.5\overline{)24}}$

$\overset{(2335)}{.2\overline{)467}}$ $\overset{(3270)}{.3\overline{)981}}$ $\overset{(92)}{.5\overline{)46}}$ $\overset{(130)}{.4\overline{)52}}$ $\overset{(316\ r2)}{.3\overline{)95}}$

(2) $\overset{(3120)}{.6\overline{)1872}}$ $\overset{(4350)}{.9\overline{)3915}}$ $\overset{(8370)}{.7\overline{)5859}}$ $\overset{(9280)}{.8\overline{)7424}}$ $\overset{(96810)}{.7\overline{)67767}}$

$\overset{(9755)}{.8\overline{)7804}}$ $\overset{(47360)}{.9\overline{)42624}}$ $\overset{(83590)}{.3\overline{)25077}}$ $\overset{(94380)}{.6\overline{)56628}}$ $\overset{(98070)}{.4\overline{)39228}}$

Part XLVII, Exercise BB

Chalkboard drill

(1) $\overset{(30)}{2.1\overline{)63}}$ $\overset{(20)}{1.4\overline{)28}}$ $\overset{(30)}{3.2\overline{)96}}$ $\overset{(20)}{4.5\overline{)90}}$ $\overset{(40)}{5.3\overline{)212}}$

$\overset{(420)}{2.4\overline{)1008}}$ $\overset{(330)}{3.5\overline{)1155}}$ $\overset{(530)}{4.1\overline{)2173}}$ $\overset{(1290)}{1.2\overline{)1548}}$ $\overset{(3050)}{3.2\overline{)9760}}$

(2) $\overset{(300)}{.25\overline{)75}}$ $\overset{(400)}{.33\overline{)132}}$ $\overset{(500)}{.41\overline{)205}}$ $\overset{(300)}{.35\overline{)105}}$ $\overset{(200)}{.43\overline{)86}}$

$\overset{(400)}{.51\overline{)204}}$ $\overset{(500)}{.21\overline{)105}}$ $\overset{(100)}{.44\overline{)44}}$ $\overset{(400)}{.23\overline{)92}}$ $\overset{(300)}{.54\overline{)162}}$

(3) $\overset{(40)}{1.6\overline{)64}}$ $\overset{(60)}{3.5\overline{)210}}$ $\overset{(40)}{8.2\overline{)328}}$ $\overset{(80)}{9.1\overline{)728}}$ $\overset{(90)}{7.3\overline{)517}}$

$\overset{(80)}{.68\overline{)524}}$ $\overset{(50)}{4.9\overline{)245}}$ $\overset{(80)}{3.7\overline{)296}}$ $\overset{(60)}{.98\overline{)588}}$ $\overset{(88)}{2.5\overline{)220}}$

(4) $\overset{(200)}{.54\overline{)108}}$ $\overset{(300)}{.73\overline{)219}}$ $\overset{(900)}{.68\overline{(612}}$ $\overset{(800)}{.78\overline{)624}}$ $\overset{(702\ r8}{.96\overline{)674}}$

$\overset{(3800)}{.65\overline{)2470}}$ $\overset{(1251\ r3)}{.47\overline{)588}}$ $\overset{(1130\ r40)}{.82\overline{)927}}$ $\overset{(866\ r28)}{.92\overline{)795}}$ $\overset{(1300)}{.76\overline{)988}}$

Part XLVII, Exercise CC

Division drill problems

Part XLVII, Exercise CC (Continued)

(1) $.3\,\overset{(30)}{\overline{)9}}$ $.5\,\overset{(50)}{\overline{)25}}$ $.4\,\overset{(15)}{\overline{)6}}$ $.2\,\overset{(45)}{\overline{)9}}$ $.5\,\overset{(76)}{\overline{)38}}$

$.04\,\overset{(400)}{\overline{)16}}$ $.03\,\overset{(500)}{\overline{)15}}$ $.02\,\overset{(950)}{\overline{)19}}$ $.01\,\overset{(9800)}{\overline{)98}}$ $.05\,\overset{(1540)}{\overline{)77}}$

(2) $.6\,\overset{(15)}{\overline{)9}}$ $.7\,\overset{(40)}{\overline{)28}}$ $.9\,\overset{(33\ r3)}{\overline{)30}}$ $.8\,\overset{(55)}{\overline{)44}}$ $.5\,\overset{(18)}{\overline{)9}}$

$.09\,\overset{(4700)}{\overline{)423}}$ $.06\,\overset{(3700)}{\overline{)222}}$ $.08\,\overset{(9200)}{\overline{)736}}$ $.07\,\overset{(8700)}{\overline{)609}}$ $.08\,\overset{(7600)}{\overline{)608}}$

Part XLVII, Exercise DD

Division drill problems

(1) $3.2\,\overset{(440)}{\overline{)1408}}$ $1.4\,\overset{(350)}{\overline{)490}}$ $5.3\,\overset{(420)}{\overline{)2226}}$ $4.5\,\overset{(540)}{\overline{)2430}}$ $2.4\,\overset{(360)}{\overline{)864}}$

$.42\,\overset{(3100)}{\overline{)1302}}$ $.31\,\overset{(4300)}{\overline{)1333}}$ $.24\,\overset{(22550)}{\overline{)5412}}$ $.35\,\overset{(15494\ r10)}{\overline{)5423}}$ $.15\,\overset{(5400)}{\overline{)810}}$

(2) $9.2\,\overset{(70)}{\overline{)644}}$ $7.3\,\overset{(40)}{\overline{)300}}$ $6.3\,\overset{(80)}{\overline{)504}}$ $8.4\,\overset{(70)}{\overline{)588}}$ $9.6\,\overset{(50)}{\overline{)480}}$

$.38\,\overset{(1700)}{\overline{)646}}$ $.49\,\overset{(2800)}{\overline{)1372}}$ $.56\,\overset{(1692\ r48)}{\overline{)948}}$ $.78\,\overset{(635\ r70)}{\overline{)496}}$

$.95\,\overset{(418\ r90)}{\overline{)398}}$

Part XLVII, Exercise A

(1) 210 (2) 217 r2 (3) 30 (4) 14 (5) 240 (6) .34

(7) 2.6 r2 (8) .85 r52 (9) .068 (10) 262.3 (11) .409

(12) 82.9 (13) 5.809 (14) .307 r2 (15) 978 r1

Part XLVII, Exercise B

(1) 34 (2) .20 r9 (3) 2.4 (4) 54 (5) 3.19 r 20

Part XLVII, Exercise B (Continued)

(6) 42 (7) .0316 (8) 3.11 r38 (9) 645 (10) 42.3

(11) .462 r3 (12) .346 (13) .976 (14) .0495 (15) 5.37 r2

Part XLVII, Exercise C

(1) 20 (2) 8 (3) 14 (4) 5 (5) 23 (6) 146.5 r1 (7) 1.85 r21

(8) 1733 r3 (9) 1.49 (10) 186.5 r1 (11) 14108 r3 (12) 560

(13) 8.^{5} r4 (14) .918 r1 (15) 21.15 r3

Part XLVII, Exercise D

(1) 2.85 r1 (2) 32.5 r9 (3) 1403 r17 (4) 26 r13

(5) 3.0 r2 (6) 6 (7) 1265 (8) 2.02 (9) 300 (10) 402.7 r18

(11) 92 r50 (12) 4.33 r43 (13) 7.2 r61 (14) 114.2 r4

(15) .958 r61 (16) .635 r35 (17) 90.04 r12 (18) .04 r80

(19) 12.2 r26 (20) .008 r95

Part XLVIII, Exercise AA

Chalkboard drill division problems

(1) $.2\,\overset{(40)}{\overline{)8}}$ $.5\,\overset{(10)}{\overline{)5}}$ $.4\,\overset{(30)}{\overline{)12}}$ $.3\,\overset{(120)}{\overline{)36}}$ $.1\,\overset{(800)}{\overline{)80}}$ $.04\,\overset{(500)}{\overline{)20}}$

$.03\,\overset{(600)}{\overline{)18}}$ $.02\,\overset{(6950)}{\overline{)139}}$ $.05\,\overset{(1960)}{\overline{)98}}$ $.04\,\overset{(750)}{\overline{)30}}$ $.03\,\overset{(3266\text{ r6}}{\overline{)98}}$

(2) $.8\,\overset{(120)}{\overline{)96}}$ $.7\,\overset{(230)}{\overline{)161}}$ $.5\,\overset{(106)}{\overline{)53}}$ $.9\,\overset{(230)}{\overline{)207}}$ $.6\,\overset{(740)}{\overline{)444}}$

$.09\,\overset{(4400)}{\overline{)396}}$ $.08\,\overset{(6700)}{\overline{)536}}$ $.08\,\overset{(9700)}{\overline{)776}}$ $.07\,\overset{(8700)}{\overline{)609}}$ $.06\,\overset{(9300)}{\overline{)468}}$

(3) $3.2\,\overset{(152\text{ r6})}{\overline{)487}}$ $1.4\,\overset{(420)}{\overline{)588}}$ $1.2\,\overset{(756\text{ r8})}{\overline{)908}}$ $4.3\,\overset{(208\text{ r16})}{\overline{)897}}$ $5.4\,\overset{(73\text{ r18})}{\overline{)396}}$

Part XLVIII, Exercise AA (Continued)

$.45\,\overset{(2193\ r15)}{\overline{)987}}$ $.33\,\overset{(2663\ r21)}{\overline{)879}}$ $.13\,\overset{(7292\ r4)}{\overline{)948}}$ $.22\,\overset{(2509\ r2)}{\overline{)552}}$ $.52\,\overset{(38200)}{\overline{)19864}}$

(4) $.68\,\overset{(879\ r28)}{\overline{)598}}$ $.79\,\overset{(1077\ r17)}{\overline{)851}}$ $.86\,\overset{(114\ r16)}{\overline{)984}}$ $.98\,\overset{(1019\ r38)}{\overline{)999-}}$

$.64\overset{(754\ r44)}{\overline{)483}}$ $.73\,\overset{(1341\ r7)}{\overline{)979}}$ $.82\,\overset{(1168\ r24)}{\overline{)958}}$ $.94\,\overset{(1050)}{\overline{)987}}$

$.63\,\overset{(58700)}{\overline{)36981}}$ $.87\,\overset{(3800)}{\overline{)3306}}$

Part XLVIII, Exercise BB

(1) $2.13\,\overset{(4500)}{\overline{)9585}}$ $3.42\,\overset{(500)}{\overline{)1710}}$ $4.53\,\overset{(300)}{\overline{)1359}}$ $1.42\,\overset{(501\ r58)}{\overline{)712}}$

$5.21\,\overset{(200)}{\overline{)1042}}$ $3.12\,\overset{(174\ r212}{\overline{)545}}$ $4.12\,\overset{(375)}{\overline{)1545}}$ $2.54\,\overset{(330\ r80)}{\overline{)839}}$

(2) $7.16\,\overset{(500)}{\overline{)3580}}$ $8.53\,\overset{(300)}{\overline{)2559}}$ $9.16\,\overset{(527\ r168)}{\overline{)4829}}$ $7.31\,\overset{(682\ r58)}{\overline{)4986}}$

$6.39\,\overset{(136\ r506)}{\overline{)874}}$ $6.84\,\overset{130\ r680)}{\overline{)896}}$ $7.94\,\overset{(110\ r60)}{\overline{)874}}$ $9.72\,\overset{(82\ r96)}{\overline{)798}}$

$8.34\,\overset{(117\ r712\ )}{\overline{)983}}$ $5.96\,\overset{(163\ r362)}{\overline{)978}}$

Part XLVIII, Exercise CC

Chalkboard drill division problems

(1) $12.4\,\overset{(3520)}{\overline{)43648}}$ $3.41\,\overset{(23400)}{\overline{)79794}}$ $4.15\,\overset{(14200)}{\overline{)58930}}$ $.213\overset{(2000)}{\overline{)\ 426}}$

$.413\,\overset{(4000)}{\overline{)2052}}$ $5.12\,\overset{(300)}{\overline{)1536}}$ $45.2\,\overset{(40)}{\overline{)1808}}$ $.315\,\overset{(5000)}{\overline{)1575}}$

$32.3\,\overset{(210)}{\overline{)6783}}$ $.534\,\overset{(4000)}{\overline{)2136}}$

Part XLVIII, Exercise CC (Continued)

(2) $\begin{array}{r}(50)\\64.7\overline{)3235}\end{array}$ $\begin{array}{r}(400)\\8.67\overline{)5068}\end{array}$ $\begin{array}{r}(280)\\93.1\overline{)26068}\end{array}$ $\begin{array}{r}(3000)\\.798\overline{)2394}\end{array}$

$\begin{array}{r}(16000\\.914\overline{)14624}\end{array}$ $\begin{array}{r}(400)\\7.38\overline{)2952}\end{array}$ $\begin{array}{r}(2222\ r638)\\.871\overline{)1936}\end{array}$ $\begin{array}{r}(144\ r76)\\6.21\overline{)895}\end{array}$

$\begin{array}{r}(24000)\\.713\overline{)17112}\end{array}$ $\begin{array}{r}(957\ r118)\\9.26\overline{)8863}\end{array}$

Part XLVIII Exercise DD

Drill Division problems for chalkboard activities

(1) $\begin{array}{r}(120)\\.2\overline{)24}\end{array}$ $\begin{array}{r}(550)\\.04\overline{)22}\end{array}$ $\begin{array}{r}(3000)\\.003\overline{)9}\end{array}$ $\begin{array}{r}(56)\\.5\overline{)28}\end{array}$ $\begin{array}{r}(1000)\\.001\overline{)1}\end{array}$

$\begin{array}{r}(1661\ r38)\\.42\overline{)698}\end{array}$ $\begin{array}{r}(27857\ r5)\\.035\overline{)955}\end{array}$ $\begin{array}{r}(800)\\.54\overline{)432}\end{array}$ $\begin{array}{r}(900)\\.23\overline{)207}\end{array}$

$\begin{array}{r}(26000)\\.431\overline{)11206}\end{array}$

(2) $\begin{array}{r}(20)\\.6\overline{)12}\end{array}$ $\begin{array}{r}(500)\\.18\overline{)90}\end{array}$ $\begin{array}{r}(3000)\\.007\overline{)21}\end{array}$ $\begin{array}{r}(300)\\.59\overline{)177}\end{array}$ $\begin{array}{r}(50)\\.9\overline{)45}\end{array}$

$\begin{array}{r}(13000)\\.728\overline{)9468}\end{array}$ $\begin{array}{r}(2700)\\.87\overline{)2349}\end{array}$ $\begin{array}{r}(13868\ r684)\\.687\overline{)9528}\end{array}$

$\begin{array}{r}(9842\ r10)\\.095\overline{)925}\end{array}$ $\begin{array}{r}(3800)\\.76\overline{)2888}\end{array}$

Part XLVIII, Exercise A

(1) .5 (2) 50 (3) 28 (4) 1301 (5) 187 (6) 2.02 r1

(7) 2.25 r30 (8) .35 r6 (9) 31.27 (10) 1404 r35 (11) 70 r26

(12) 7.0 r20 (13) 1321 r6 (14) 1.46 r4 (15) 19275 r7

(16) 216 r1 (17) 46.3 r36 (18) .0453 r38 (19) .6 r22

(20) .5

Part XLVIII, Exercise B

(1) 3 (2) 1.4 r71 (3) 200 (4) 21 r189 (5) .06 r12

(6) .2 r6 (7) 20 r32 (8) 14 r83 (9) 190 r89 (10) 359 r622

(11) 50 r11 (12) .45 r24 (13) 7 r759 (14) .1 r254 (15) 106 r21

Part XLVIII, Exercise C

(1) 231 (2) 212 r2 (3) 3 r33 (4) .009 (5) .9 r213

(6) 9 (7) 3.0 r57 (8) 1563 r1 (9) 193 r12 (10) 247 r12

(11) 1 r332 (12) 1118 r5 (13) 9 (14) 344 r168 (15) .24 r282

(16) .004 (17) 104 r2 (18) .002 r90 (19) .006 r642

(20) 1430 r60

Part XLIX, Exercise AA

Calculator drill with division problems without remainders entered

(1) $2\,\overset{(23)}{\overline{)46}}$ $4\,\overset{(63)}{\overline{)252}}$ $5\,\overset{(746)}{\overline{)3730}}$ $3\,\overset{(2932)}{\overline{)8796}}$ $6\,\overset{(3587)}{\overline{)21522}}$

$9\,\overset{(13682)}{\overline{)123138}}$ $7\,\overset{(5482)}{\overline{)38374}}$ $8\,\overset{(3506)}{\overline{)28048}}$ $27\,\overset{(6328)}{\overline{)170856}}$ $45\,\overset{(791.64444)}{\overline{)35624}}$

$3.8\,\overset{(8578.421)}{\overline{)32598}}$ $2.6\,\overset{(376.15384)}{\overline{)978}}$ $.24\,\overset{(8391.6666)}{\overline{)2014}}$ $.256\,\overset{(24597.656}{\overline{)6297}}$

$.003\,\overset{(1326000)}{\overline{)3978}}$

(2) $.058\,\overset{(16603.448)}{\overline{)963}}$ $.76\,\overset{(12050)}{\overline{)9158}}$ $5.38\,\overset{(69.888475)}{\overline{)376}}$

$56.9\,\overset{(76.889279)}{\overline{)4375}}$ $2.06\,\overset{(606.31067)}{\overline{)1249}}$ $.025\,\overset{(41000)}{\overline{)1025}}$

$98.2\,\overset{(42.382892)}{\overline{)4162}}$ $9.08\,\overset{(691.74008)}{\overline{)6281}}$ $68.3\,\overset{(6247.8916)}{\overline{)426731}}$

$.009\,\overset{\overline{(2777.7777)}}{)25}$

Part XLIX Exercise BB

Stated problems for drill at the chalkboard

(1) O.K. Garage ordered 48 exhaust valves 55-1426 P @ $2.99 each and 34 intake valves 55-1424 N @ $2.69 each. How much was the order?
($234.98)

(2) We Fix Garage ordered a rocker arm and shaft assembly for a 1975 Mercury V8 engine 352, stk. no. 37-5497 P @ $71.95. The garage was given a 5 per cent discount. How much did the order cost the garage?
($68.35)

(3) Service Garage ordered the following: one camshaft for 1974 V8 Chevrolet 350 engine, stk. no. 37-2677 P, $27.98; 1 set camshaft bearings for the Chevrolet, stk. no. 55-1373 U @ $4.98; 16 hydraulic valve lifters for the Chevrolet, stk. no. 37-7309 N @ $2.29 each. The garage received a four per cent discount on the order and sold the parts to the customer at twelve per cent above the prices given in this order. How much did Service parts make from the parts?
($11.83)

(4) The Brown family was looking at new cars and became interested in a new 1978 Plymouth Fury 6 cylinder 225 CID 2 BBL Model RL41, 4 door sedan with a dealer cost base price of $3587.00 and a list base price @ $4292.00 The optional equipment list price is $1840.00. The DCM (dealer cost multiplier) is 76 per cent. Find the dealer cost of the options. ($1398.40) Find the dealer cost of the car with the optional equipment. ($4985.40) Find the difference between the list price with options and the dealer's cost price with options.

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Part XLIX, Exercise BB (Continued)

($1,146.60)

(5) The Olivera family wanted to buy a Mercury Cougar XR7 fully equipped. They found a 2 door Hard top with a dealer cost base price of $4653.00 and base list price of $5603.00 The DCM (dealer cost multiplier) is 78 per cent. The list price of the options was $1107. Find the dealer cost of the car fully equipped ($5516.46) Find the price to the Olivera family, if the dealer sells the car to them at 6 per cent above the dealer cost price (5185.47)

Part XLIX, Exercise CC

Drill problems amortizing car loans

(1) $5456.00 amount borrowed (principal)
X. 12
$654.72 interest for one year
X 3
($1,964.16) interest for three years
($7420.16) interest and principal paid after 3 years.

Find the interest for one year; for three years.

Find the interest for one month.

Find the monthly payments for three years.(36 months) ($206.12)

(2) If you borrowed $5658.00 @ 9 per cent interest for 36 months; how much are the monthly payments? ($199.60)

(3) If you borrowed $6000.00 @ 15 per cent interest for 36 months, how much are the monthly payments? ($241.67)

(4) If you borrowed $6,000.00 @ 20 per cent interest for 36 months, how much are the monehly payments? ($266.67)

Part XLIX, Exercise CC (Continued)

(5) If you borrowed $6000.00 @ 25 per cent interest for 36 months, how much are the monthly payments? ($291.67)

(6) Find the amount of money paid in full in problems 3, 4, and 5. ($800.01)

Part XLIX, Exercise A

(1) 170 (2) 200 (3) 136 (4) 302 (5) 390 (6) 429 (7) 428 (8) 250 for 6-250; 350 for 8-350; 400; 456 (9) 426 for 8-428; 456 for 8-455; 460 for 8-460

Part XLIX, Exercise B

(1) 86.667 (2) 82 (3) $4.52 (4) .61 each (5) $13.21 (6) $12.50 total profit $.89 average (7) $10.43 average cost of parts; $57.040 total profit; $3.80 each profit (8) $.80 average dist. $1.03 average mark up per valve; $1.83 average profit per valve.

(9) $215.01 cost of water pumps; $14.33 average cost per pump to garage. $48.76 total profit made; $3.25 average amount of profit.

(10) $30.63 mark up over list price on engine blocks; $139.97 average profit

Part XLIX, Exercise C

(1) $226.60 wholesale price on air conditioner; $41.20 wholesale price on cruise control; $72.10 wholesale price on stereo w/tape; $339.90 Total

(2) $221.45 wholesale price for air conditioner; $103.00 wholesale

Part XLIX, Exercise C (Continued)

price on auto/trans.; $30.90 wholesale price on cruise control; $30.90 wholesale price on power brakes; $61.80 wholesale price on power steering; $41.20 wholesale price on vinyl roof. ($489.25)

(3) $5410.00; $4759.29

(4) $4900.00 market price with optional equip.
$4059.25 wholesale price with optional equip.
$4302.80 price of purchase.

(5) 9%; 31%

(6) 4% increase of list price above market price; 25% list price increase above wholesale.

(7) $6085.00 price with options (list)
$5005.02 dealer's cost with options.
$779.68 saved

(8) $4603.93 dealer's cost including the equipment
$5336.00 list price including the equipment
$455.83 saved

(9) Cougar $30.68 less

Part XLIX, Exercise D

(1) $111.25 total cost for repairs.

(2) $129.91 total cost

(3) $105.23 total cost

(4) $155.62 total cost

(5) $132.05 increase price of parts; $267.93 total charges

Part L, Exercise AA

Drill problems of proportion

(1) Find the cubic inch displacement of one cylinder with radius of 2.25 inches π= 3.1416, and the stroke is 4 inches. The area of a circle πr^2 times stroke = CID

(63.6174)

(2) Find the cubic inch displacement in whole numbers of V8 engine with a cylinder radius of 1.75; π= 3.1416; stroke is 3.5 inches.

(270 CID)

(3) Find the CID of a 6 cylinder engine with a cylinder radius of 1.45 and a stroke of 3.75

(149 CID)

(4) If you could borrow $5000.00 at 12 per cent interest for three years, or borrow $5000.00 at 10 per cent interest for four years, which would cost you less?

($5,000.00 at 12 per cent interest for 3 years. $240.00 less)

(5) If you could borrow $6,000.00 at 18 per cent interest for two years; or $6,000.00 at 12 per cent interest for three years; or $6,000.00 at 10.5 per cent at four years which would be best loan arrangement?

($6,000.00 at 18 per cent for 2 years and $6,000.00 at 12 per cent for 3 years pay back the same amount $8160.00, but $6000.00 at 12 per cent is the better loan due to getting more time to pay the loan back and smaller monthly payments.)

Part L, Exercise BB Test

(1) $\overset{(2)}{2\overline{)\,4}}$ $\quad$ $\overset{(4)}{3\overline{)12}}$ $\quad$ $\overset{(6)}{4\overline{)24}}$ $\quad$ $\overset{(30)}{.5\overline{)15}}$ $\quad$ $\overset{(40)}{3.5\overline{)140}}$ $\quad$ $\overset{(300)}{.02\overline{)6}}$

$\overset{(400)}{.004\;)16}$

(2) $1169. list price of optional equipment; dealer cost multipler (DCM) 78 per cent. Find the difference between the Ford LTD Landau list price fully equipped, when the base list price is $5898. and the dealer cost when the dealer cost base price is $4722.00

($1430.18)

(3) The area of a circle is πr^2. Find the cubic inch displacement (CID) of an eight cylinder engine when the radius is 1.70 inches and the stroke is 3.50 inches.

(254)

(4) The bore of an engine is the diameter of the circle of a cylinder; if the bore is 4.5 inches and the stroke is 4.0 inches, what is the CID of a six cylinder engine.

(170CID)

(5) We Fix Garage removed and replaced the Camshaft for a 1973 Chrysler V8 stk. no. 37-6429 B @ $29.98 for the part and labor @ $12.00 per hour. It took 2.4 hours. How much did the garage charge for the auto parts and labor?

$58.78

Part L, Exercise CC Test

(1) Enter this problem on the billing sheet in the proper places.

Part L, Exercise CC Test (Continued)

Import Garage removed and replaced on a VW 1973 engine 1600, the crankshaft, main and rod bearings, two connecting rods. The order price of the parts are as follows: crankshaft $64.98; main bearings 1 set @ $7.49; rod bearings 1 set @ $2.98; and connecting rods each @ $12.98.

The garage was given a five per cent discount for the parts. The customer was charged 12 per cent above the order price by the garage. Labor took 5.3 hours @ $14.00 per hour. How much did the garage make from the sale of parts? ($17.24) How much did the garage charge the customer after a 5 per cent state tax on the bill? $197.09

(2)

$$\begin{array}{r} (8 \text{ r } 44) \\ 3.07\overline{)26} \end{array} \qquad \begin{array}{r} (139000) \\ .005\overline{)685} \end{array} \qquad \begin{array}{r} (860 \text{ r}60) \\ .079\overline{)68} \end{array}$$

Part L, Exercise A

(1) 80 miles; (2) 276 miles (3) 5 gals. (4) 18 miles per gal.

(5) 17 miles (6)

$$\begin{array}{r} \$.029 \\ \underline{.028} \\ .001 \end{array}$$ regular gas is less.

(7) $0.023 cost per mile on 61¢; $0.018 cost per mile on 57¢

(8) $0.021 on Plymouth Horizon; $126.00 at 6,000 miles; $252.00 at 12,000; $409.50

(9) $.016 at 57¢; $117.00 at 6,000 miles; $234.00 at 12,000 miles; $351.00 at 18,000 miles

(10) $15.00 at 3,000 miles; $60.00 at 12,000 miles $90.00 at 18,000 mi. $19.50; $39.00; $58.50

Part L, Exercise B

(1) 5; 2; 2; 5; 7; 3; 2; 10; 3; 9; 1; 2; 6; 9; 7

(2) 2; 2; 2; 3; 4; 2;

(3) 27; 45; 39; 54; 97; 21; 31; 43; 64; 85

(4) 8; 9; 10; 15; 12

(5) 12; 16; 24; 21; 36

(6) 21; 22; 41; 43; 42

(7) 97; 36; 43; 45; 68

(8) 42; 56; 54; 72; 48

(9) 126; 114; 415; 36; 272

(10) 192; 344; 378; 765; 632

(11) 21; 22; 18; 21; 30.78

(12) 12.16+; 161.8+; 3.32+; 1765.1+; .12+

(13) 121.788; 5.110; 986.05; 5.076; 27.864

(14) 9; 27; 12   13; 65; 60; 20

(15) 15; 105; 81; 9

Part L, Exercise C

(1) $8160.12

(2) $540.00 for one year; $1620.00 for three years; $211.67 per mo.
$180.00 for 1 year; $540.00 for 3 years.

(3) $885.00 not borrowed; $1994.40 interest; $6149.40 in three years; $170.82 monthly payment; $7034.40 purchase price;

(4) $863.46 dealer cost of optional equip. $5736.64 price of car at 4% $5846.96 price at 6%.

Part L, Exercise C (Continued)

(5) 5,320.00 dealer cost; 212.80 4%; $5532.80 total

5,320.00 dealer cost; $319.20 6%; $5639.20 total

(6) $5629.52 at 4%; $5737.78 at 6%

(7) $131.37 made from sale; $44.80 labor charged

(8) $105.08 total bill with 5% tax; $11.13 profit on parts

(9) $292.00; $1836.00 labor on 4 mechanics; $340.00 per week;

$1360.00 one week; $476.00 made by garage.

(10) $1450.00 taken in that week; $360.00 each paid; $1440.00 all

paid. $10.00 profit.

REFERENCES

I. Automotive Parts and Accessories, Catalog No. 364 B.
Chicago: J. C. Whitney and Company, 1977.

II. Buyer's Guide Reports 1978 Autos, Volume IV, No. 35
Milwaukee, Wisconsin: D. M. R. Publications, Inc. 1977.

III. Car and Truck Appraisals, Fall Edition
Royal Oak, Michigan: American Auto Appraisal, 1977.

IV. Chilton's Auto Repair Manual
Radnor, Pennsylvania: Chilton Book Company, 1976.

V. Motor Crash Estimating Guide, Volume 7, No. 4
New York: Hearst Corporation, 1975.

LIST OF DOCUMENTS PRODUCED BY
THE COORDINATED CORRELATED INSTRUCTION PROGRAM

1. Aeronautical Lab Kit Unit
2. Art Unit
3. Cosmetics and Skin Care Unit
4. Fashion and Clothing Unit
5. Framework of a House Unit
6. Framework of a House and House Wiring Unit
7. Human Brain and Cervical Column Unit
8. Human Interrelations and Emotions Unit
9. Lamp Unit
10. Money Management Unit
11. Senses Unit
12. Sports Unit
13. Time Unit
14. Unit on the 100 in 1 Electrical Kit
15. Unit on the 20 in 1 Electrical Kit
16. Unit on the Human Heart
17. Visible Automobile Chassis Unit
18. Visible Head Unit
19. Visible Man Unit
20. Visible V8 Engine Unit
21. Visible Wankel Rotary Engine Unit
22. Visible Woman Unit

SELF-EVALUATION

It is my firm belief that this product is based upon sound principles of education. Amont these principles are:

1. Students must become motivated;
2. Students should have the opportunity to learn according to their individual learning style;
3. Materials should be attractive to the students;
4. Academic subjects can be correlated;
5. Some students must be prepared through prevocational and vocational education for successful participation in the world of work or in a vocational/trade school.

Within the scope of our program and this product is the psychological principle that a person will likely be successful, if given the opportunity to seek a personal goal.

The success of this products is based upon practical classroom experiences in the rural schools serviced by Tri-County Education Co-Operative, in my own self-contained classroom of several years ago in the Abilene Public Schools, and presently in several classrooms in the Odessa Public Schools.

In my opinion this product is especially effective with those who learn best by meaningful "hands on" learning experiences. However, there are many opportunities for students who are creative and can initiate activities. Yet, the products is designed for those who are capable of learning a limited amount in a school setting. The product allows for teacher flexibility in the amount to be assigned. Additional evidence has been the enthusiasm for this type of instruction by teachers.

Students receive many benefits other than the objectives stipulated in the lesson plans. Such benefits as emotional growth by working intently and closely with others during periods of assembly, with high interest materials that absorbs their attention. Other benefits accrue during assembly of the model that are grouped under learning processes: memory, selection, classification, synthesis, analysis, and evaluation.

Difficulties encountered with the product include the hesitancy of a few teachers who are unsure of themselves in things "mechanical". However, teachers who have applied themselves to this instruction have become very impressed and supportive of the instruction. The other difficulty comes from the attractiveness of the model kit. The materials must be safely stored between periods of assembly.

I recommend the use of this product with handicapped students who appear to be over active, behavior problems, who have the ability and sight to manipulate objects for assembly, who are not interested in school, who like models and cars, and who can read at least some of the words on the pretest. I also recommend this product for students returning to regular education from special education and those in regular education who are in danger of dropping out of school.